Measuring Data Quality
In the 1998 Survey of Consumer Finances

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In survey data collection, ...e questionnaire—whether implemented as CAPI, CATI, PAPI, etc.—is the core tool. Despite the efforts of the survey designers, unanticipated flaws almost always emerge during the field period, and in the case of personal interviewing, interviewers and respondents have the task of coping with any logical consistencies that arise. However, even with a questionnaire that is logically perfect in a narrow sense, there are still variations in how well interviewers understand the questionnaire and their role in the data collection process, and in how knowledgeable and cooperative respondents are. Whenever the nature of the data collected deviate from what is intended by the survey logic, the quality of the survey information is degraded. Detection of such deficiencies may be quite difficult, and "repair" is often difficult, or impossible.

The analysis here focuses on two aspects of data quality in the 1998 Survey of Consumer Finances (SCF). First, the paper looks at the data recorded for the set of survey questions that require the coding of respondents' information into a set of categories. Almost all nontrivial categorical questions in the survey allow the possibility of recording a verbatim response. In most cases, the interviewer also saw a set of codes that spanned the great majority of valid responses. Ideally, interviewers directly coded responses during the interview where possible, and otherwise entered verbatim transcriptions of respondents' answers. Ultimately any such text information was either resolved later as a code by trained coders or other technical staff, or set to a missing value when the text was uncodeable or meaningless. Failure to field code when it is possible can introduce serious inefficiencies, and may even affect data collection. Failure to collect sufficient relevant information directly degrades the data quality.

The second aspect of data quality considered is the changes to the data as a result of editing. Editing in the SCF is driven by a variety of types of text data provided by interviewers, and by a priori logical and institutional consistency requirements. Each interviewer comment and each possible logical or institutional inconsistency was examined to determine whether the data should be changed as a result. Data changes after the interview are often highly inefficient and sometimes such changes entail the generation of substantial amounts of missing data.

The first section of the paper gives some background on the SCF and describes the data used in this analysis. The next section develops indicators of the two classes of data quality for coding and editing. The final section presents a descriptive model of the outcome measures in terms of the characteristics of respondents and interviewers. A final section provides a summary and points toward further research.

■ Data

The SCF is designed to collect detailed information on the assets, liabilities and other financial characteristics of families, and on other variables that are analytically useful in interpreting that information.[1] The assets covered by the survey include real estate, businesses, bank accounts, stocks, bonds, mutual funds, pension entitlements, and other assets. Liabilities covered include credit cards, mortgages, lines of credit, education loans, other types of installment loans, margin accounts, pension loans, and other types of debts. Generally, each asset and liability question is a part of a set of questions intended to clarify the type of item and to provide important related detail—for example, most loan sequences request information on payments and other terms of the loan. Other information is collected on the financial institutions with which respondents hold the assets and liabilities reported, the employment history of the respondent and a possible spouse or partner, demographic variables, and a variety of other items.

The full set of SCF questions supports a total of about 3,000 final variables, but because of the skip patterns of the questionnaire, it would not be possible for any given respondent to provide information on all of these.[2] In-

deed, the maximum number of responses given in any 1998 SCF interview was about 780. The average interview in 1998 lasted about 75 minutes.

The participants in the 1998 survey include 2,813 respondents from an area-probability sample, and 1,496 respondents from a list sample designed to over-sample wealthy households.[3] The response rate for the area-probability sample was about 70 percent; the response rate for the list sample varies strongly by stratum with progressively wealthier households having substantially lower response rates.[4]

The 1998 survey was conducted by the National Opinion Research Center at the University of Chicago between the months of June and December. Interviewers collected the data using a CAPI program. During their training, interviewers were taught both how to record respondents' data using the instrument, and how to record auxiliary information that might either further specify or qualify a response. The auxiliary information could take one of three forms.

First, on questions that required a categorical response (e.g., the frequency with which mortgage payments are made), provision was made for the interviewer to enter verbatim responses in situations where a respondent's answer could not be coded directly using a code displayed on the computer screen. Usually, interviewers were presented with only the most common responses in order to avoid placing them in the stressful position of searching through many possibilities while keeping a respondent engaged.[5] The verbatim responses were all reviewed later by coders who were asked to reduce the responses to codes in the code frames developed by the survey designers.[6] Sometimes, the information recorded was inadequate to be interpreted by standard coders, and more specialized coders attempted to determine the proper codes. In other cases, the information was so inadequate that the responses were not codeable at all. This latter set includes both cases where the respondent answered a different question from the one that was intended—a situation that should have moved the interviewer to probe for a more appropriate response—and cases where the interviewer simply recorded an inadequate summary.

A second type of auxiliary information could be recorded by an interviewer at almost any location in the questionnaire using a feature of the CAPI program that links comment fields and responses. Interviewers were not constrained as to the type or amount of information they could record in this way. The third type of information was provided by interviewers in a "debriefing" interview they were required to complete after each main interview. This information is structured around a set of questions that look for specific types of misreporting and a final question asks for any additional information that might be useful in resolving later questions about the coherence of the interview. The comment and debriefing information was used primarily in the first stage of editing of the main data. Sometimes this information triggered very substantial rearrangements of the original data.

Once the original data were fully coded and the initial edit based on the interviewers' auxiliary information was completed, the data were subjected to an intensive review for consistency of responses, recording errors, and errors of interpretation on the part of the respondents or the interviewers. Quite often, these searches were sparked by patterns of interviewer comments in the 1998 survey or in previous waves of the survey. At this stage of editing, a heavy preponderance of evidence was required to change the data. Simple inconsistency is rarely sufficient alone to allow an alteration of the data.

For every variable in the questionnaire, there is an associated "shadow variable" that provides information about the original response and about adjustments that were made to the variable during the coding and editing stages. Among many other possibilities, the shadow variables track whether a variable was reported directly and remained unchanged during editing, whether the value was missing because the respondent would not or could not give an answer, whether it was overridden based on interviewer comments, or whether it was missing because it was determined to be an erroneous or irrelevant response during editing. In the case of categorical variables, the shadow variables also record at what stage the variable was coded—by the interviewer during the interview, by the initial coder, or by the more

expert coders—or whether the value was determined to be uncodeable. The information in these shadow variables is a key support of the analysis reported in this paper.

A final source of information used in the analysis is a self-administered interview of the interviewers after their training. The questionnaire asked about aspects of their work experience as interviewers, their attitudes—including questions about their feelings about privacy, their perceptions about respondents in general, and other attitudes—and demographic information. To encourage honest responses, the interviewers were asked to mail the completed form to the SCF staff at the Federal Reserve Board and they were promised that no individual information would be shared with NORC. For legal reasons, interviewers could not be asked to complete the interview until after their training. The response rate was only 75 percent, but these cooperating interviewers accounted for 86 percent of the completed main interviews.

■ Indicators of Data Quality

This section presents descriptive statistics on two aspects of data quality. The first of these describes the behavior of interviewers in dealing with questions that have the possibility of an open-ended response. The second concerns the effects of editing on the final survey dataset used for analysis.

Coding

The final SCF data provide clear information on whether interviewers sufficiently probed and recorded respondents' answers to categorical questions to allow the resolution the responses within the appropriate code frames. In addition to a large number of "yes/no" and similar questions in the survey, there are 450 questions that require interviewers to solicit sufficient information to fit a response into a code frame. Across all cases, the total number of such questions asked was about 217 thousand, an average of about 50 per case. Of the responses, there are almost 8,800 instances where the questions were answered either "don't know" or "refuse." Of the remainder, 80.1 percent were successfully coded by interviewers during the interview using codes avail-

able on the computer screen, 17.7 percent could be resolved by traditional coders, 1.7 percent could be resolved by coders more highly trained in the subject matter of the interview, and 0.5 percent did not contain sufficient information to resolve the response.[7] In the SCF, every verbatim response must be resolved either to a code in the code frame or to a missing value. Of all the responses resolved by either group of coders, 7.7 percent of the responses could have been coded directly by the interviewers.

Both the provision of insufficient information for coding ("NOCODE") and the failure to field code responses where possible ("CODERR"), are failures in data collection.[8] The effect of the former on data quality is direct. The latter failure is a problem in two senses. First, in many cases, the default questionnaire skip patterns followed for verbatim responses can cause serious information losses. Second, the attempts to resolve codes at higher levels of data processing introduce serious inefficiencies. Thus, although occurrence of the two types of error may seem fairly low, the costs they impose are large.

Almost half of the observations—43.8 percent—have a nonzero value of CODERR, and 17.3 percent have a nonzero value of NOCODE. Figures 1a and 1b show histograms across observations of the number of each of these two types of errors within each observation.[9] Most cases with an error of either type had only one instance.

These figures aggregate over a wide range of subjects—payment frequencies, pension characteristics, occupations, etc.—as well as several question types—single response, multiple-response, open-ended. Figures 2a and 2b show histograms across variables of the two types of error rates. Although most variables had a fairly low level of problems, some had quite a large number. The first section of the appendix contains a listing of the variables with more than 10 errors for each error type. These high-error variables identify locations that were most difficult for interviewers and respondents, and they will serve to guide further refinements in training, CAPI screen design, and question wording for the next round of the survey. Table 1 breaks the data down by question types—whether the underlying question al-

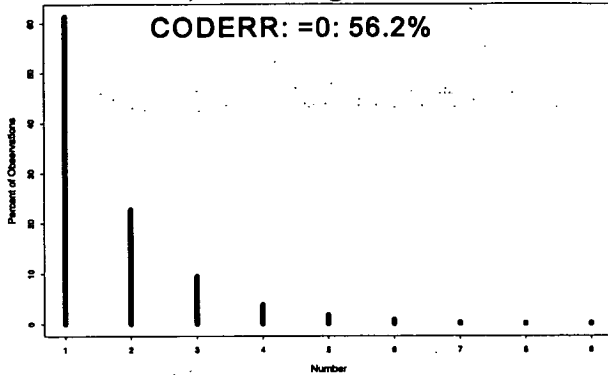**Figure 1a: Histogram of CODERR Over Observations, Excluding Zeroes.**

CODERR: =0: 56.2%

Figure 1b: Histogram of NOCODE Over Observations, Excluding Zeroes.
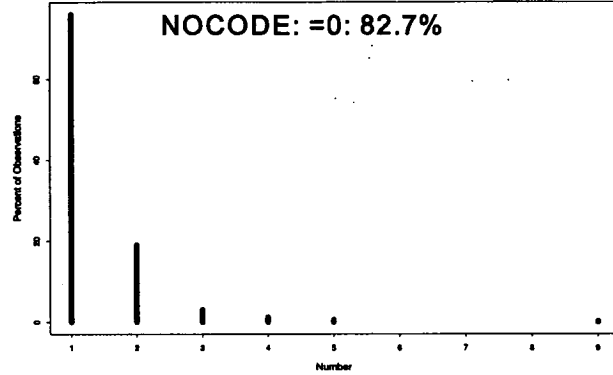
NOCODE: =0: 82.7%

Figure 2a: Histogram of CODERR Over Variables, Excluding Zeroes.
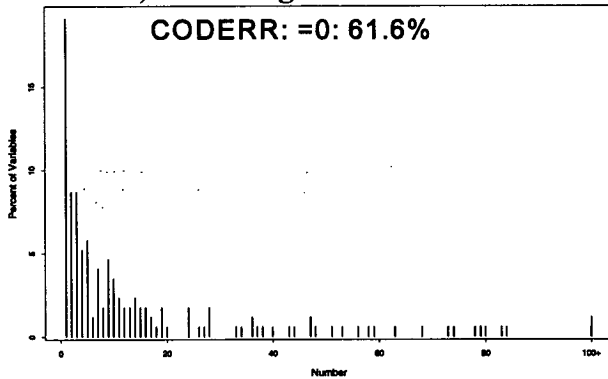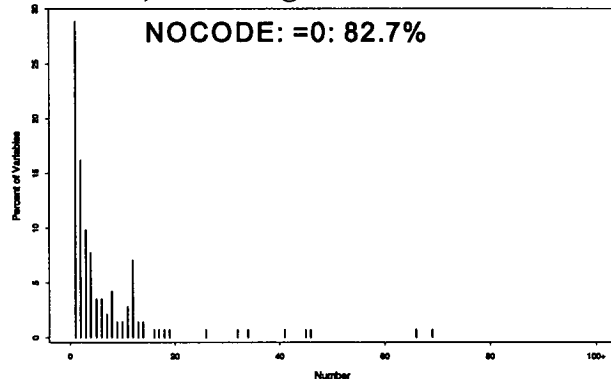
CODERR: =0: 61.6%

Figure 2b: Histogram of NOCODE Over Variables, Excluding Zeroes.

NOCODE: =0: 82.7%

lowed multiple responses, whether the underlying question was entirely open-ended, and whether the underlying question was not open-ended—that is, whether it allowed the possibility of field coding. It should not be surprising that the highest overall rate of NOCODE is among variables that do not provide the interviewer with a set of applicable response codes. Industry and occupation coding is the classic example, but in the SCF a far worse problem is a series of field-codeable questions asking how the respondent does business with their financial institutions. A card is offered to the respon-

dent containing a list of possible responses ("check," "in person," "by ATM," etc.), but some respondents answered with the types of accounts they have at the institutions.

The variation in CODERR and NOCODE over the interviewers is substantial. Figures 3a and 3b show histograms across interviewers of the two error rates. A relatively small number of the 184 interviewers who completed at least one case accounted for a large part of the interviews: the top 25 percent producers completed

Table 1: Error Rate by Type of Variable, 1998 SCF

	Multiple response	Open-ended	Field-codeable
# variables	44	50	401
# times asked (thou.)	67.6	33.2	188.4
% field-coded*	88.1	0	91.2
% CODERR*	1.9	0	1.7
% NOCODE*	0.5	1.1	0.4

* Computed as a percent of the number of times the questions were answered with a response other than "don't know" or "refuse."

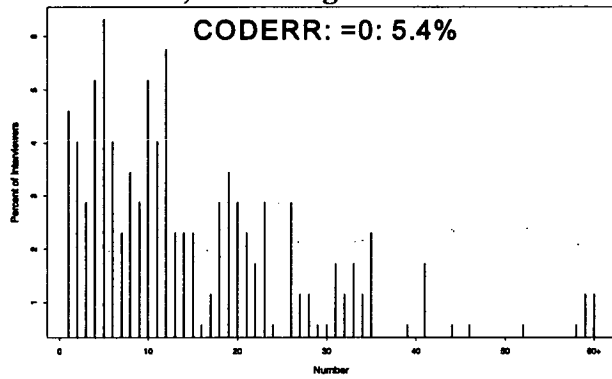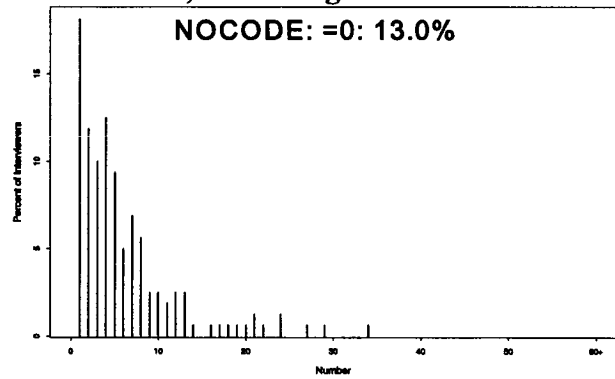**Figure 3a: Histogram of CODERR Over Interviewers, Excluding Zeroes.**

CODERR: =0: 5.4%

Figure 3b: Histogram of NOCODE Over Interviewers, Excluding Zeroes.

NOCODE: =0: 13.0%

33 cases or more, while the bottom 25 percent completed only 7 or fewer cases. Thus, a high number of errors could simply reflect a low error rate on a large number of cases. However, the mean number of errors per case also shows substantial variation (figures 4a and 4b). About a quarter of the interviewers averaged one or more instances of CODERR per case, while about a third averaged less than 0.5 per case. About 13 percent of the interviewers averaged one instance of NOCODE every other case, while a third averaged less than 0.125 per case. As one would expect from the cross-observation and cross-variable distributions of the errors, there is also considerable variability within a given interviewer's cases, suggesting that variations in respondents that the interviewers faced are an important factor.

Editing

Frequently, the information obtained from various interviewer comments and from more mechanical data review provokes large changes in the interpretation of the original data. If interviewer comments were the only information available to steer the editing, there would be little hope for separating the interviewer characteris-

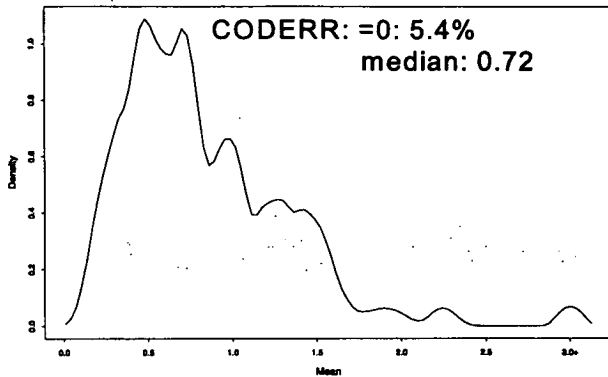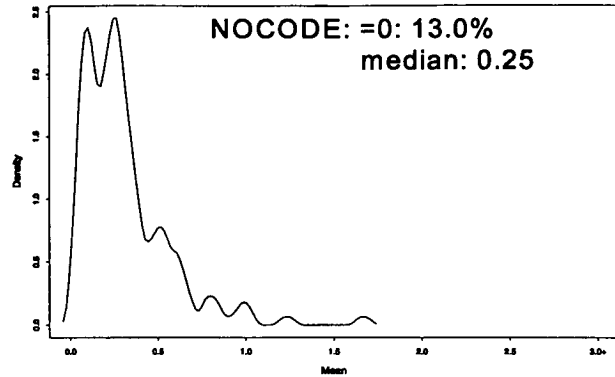**Figure 4a: Distribution of Mean of CODERR Over Interviewers, Excluding Zeroes**

CODERR: =0: 5.4%
median: 0.72

Figure 4b: Distribution of Mean of NOCODE Over Interviewers, Excluding Zeroes

NOCODE: =0: 13.0%
median: 0.25

tics that are correlated with the likelihood of documenting their work, from those that are related to the likelihood of having response errors during an interview. In practice, while interviewers' comments may apply most directly to their own cases, the information obtained has been used over time to develop rules to detect likely errors for more intensive examination. Such editing accounts for a sizeable fraction of the data changed during the editing phase of SCF data processing. In the material below, it is possible to make a fairly clean separation between these two types of edits.

There are a total of almost 48 thousand differences between the final version of the dataset and a version of that dataset excluding the two classes of edits. For comparison, there there are about 2 million fields in total that do not contain a code signifying an inapplicable item in either dataset. In over 15 thousand instances, editing "created" new missing data. In some ways, these figures overstate the true effect of editing. For example, an edit may determine that a particular response was unreliable; as a consequence, it becomes unknown which of several alternative sequences of subsequent questions the questioning should follow, and all of these subsequent questions in each branch are treated independently as missing data. In many other cases, edits are relatively simple rearrangements of the original data. Nonetheless, a very substantial fraction of the edits represent important changes to the data. Given the nature of the survey, a better indicator of the effects of editing may be the changes induced in dollar variables. Out of a

total of about 173 thousand non-inapplicable data values for dollar variables, there were about 7,200 changes of any sort, and of those changes about 2,600 resulted in new missing values.

As shown in figures 5a and 5b, there is a broad dispersion in the number of edits across observations.[10] While 58 percent of all observations had at least some data change as a result of editing, only about 27 percent gained a new missing value, and the median number of such missing values was seven. In terms of edits to dollar variables, the scope of editing was much more limited: almost 62 percent of cases had no edits, only about 14 percent gained a new missing value, and the median number of new missing values for the latter group was one.

The great majority of variables—including dollar variables—had at least some changes made, and the proportion with at least one new missing value is also high (figures 6a and 6b). Although incidents of changes were broadly spread across variables, a much smaller number of variables accounted for a disproportionate share of the total edit changes.[11] To give a sense of the topics that were particular sources of problems, table 2 provides information on edits by area of the questionnaire.[12] Reporting of information on financial institutions was particularly problematic. Near the beginning of the interview, respondents were asked to list all the institutions with which they do business. If an additional institution emerged later while the respondent was describ-

Figure 5a: Density of Number of All Edits and All Edits Yielding New Missing Values in Any Variables, Across Observations; Excluding Zeroes
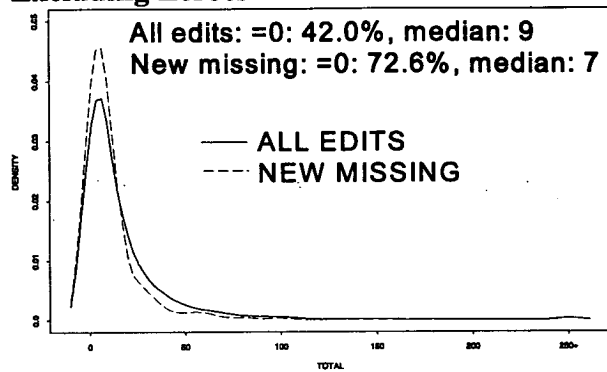
All edits: =0: 42.0%, median: 9
New missing: =0: 72.6%, median: 7

—— ALL EDITS
---- NEW MISSING

Figure 5b: Density of Number of All Edits and All Edits Yielding New Missing Values in Dollar Variables, Across Observations; Excluding Zeroes
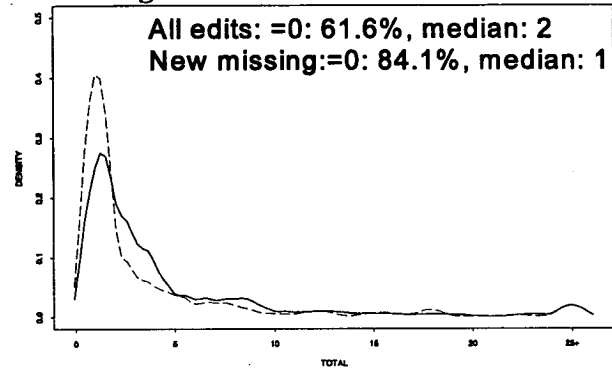
All edits: =0: 61.6%, median: 2
New missing:=0: 84.1%, median: 1

Figure 6a: Density of Number of All Edits and All Edits Yielding New Missing Values, Across Variables; Excluding Zeroes

All edits: =0: 5.5%, median: 6
New missing: =0: 32.8%, median: 5

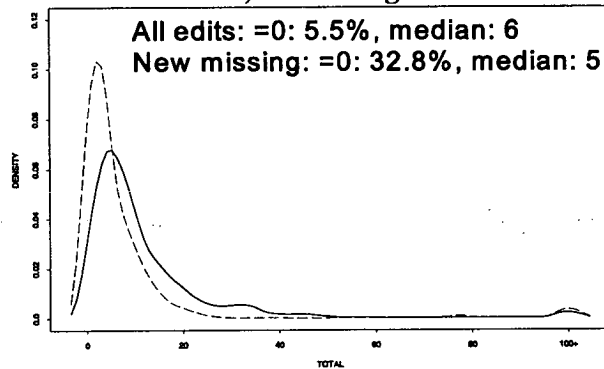**Figure 6b: Density of Number of All Edits and All Edits Yielding New Missing Values, Across Dollar Variables; Excluding Zeroes**

All edits: =0: 5.4%, median: 6
New missing: =0: 24.8%, median: 5
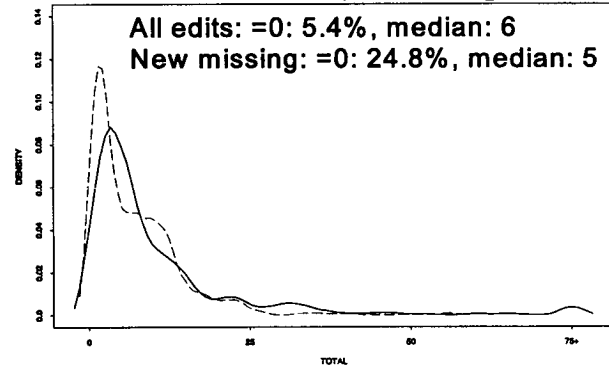
ing any of a number of assets or liabilities, the interviewer was supposed to follow a set procedure to add that institution to the initial roster. Failure to perform this procedure correctly was the single greatest source of new missing variables. Other particular problem spots were misreporting reporting of pensions and other assets that have characteristics of pensions (such as IRAs). Confusion in the information used to determine the current employment status of respondents was a very costly error in terms of generating large amounts of missing data on work status and pensions associated with the current job.

The data in figures 7a and 7b on the number of different types of edits across interviewers suggests a very

wide variation in data quality problems across interviewers. However, this inference may be incorrect for two reasons. First, some interviewers completed far more cases than others, so even if all interviewers had the same level of problems, those with more completed cases would appear to have more problems. However, as shown in figures 8a and 8b, the same conclusions hold when looking at the distribution of the averages of the edits across each interviewer's cases. A second potential problem is that a large fraction of the edits was determined by information provided by the interviewers: about 87 percent of total edits and total new missing values were determined from interviewer comments. Because the responses of some SCF respondents are quite complicated, there may not always be an easy fit with

Table 2: Data Changes, Comment-Driven and All Types of Edits

	Number variables	Non-blank variables		All changes			New missing values		
		Number (thou.)	Percent of total	Number	Percent of Total	Non-blank	Number	Percent of. Total	Non-blank
Data Changes Directly Attributable to Interviewer Comments									
HH listing	91	117.0	5.84	418	1.00	0.36	10	0.07	0.01
Institutions	79	140.0	6.98	9,200	22.02	6.58	5,615	41.7	4.01
Credit cards	73	142.6	7.11	258	0.62	0.18	78	0.58	0.05
Housing	90	55.6	2.78	556	1.33	1.00	49	0.36	0.09
Mort./LOC	158	82.9	4.14	2,068	4.95	2.49	134	0.99	0.16
Inv. real estate	189	62.6	3.12	1,811	4.33	2.89	685	5.08	1.09
Businesses	134	60.6	3.02	1,783	4.27	2.94	498	3.70	0.82
Vehicles	176	93.8	4.68	2,427	5.81	2.59	315	2.33	0.34
Cons. loans	281	40.7	2.03	2,154	5.15	5.29	234	1.74	0.57
Fin. assets	301	324.6	16.19	4,949	11.84	1.52	1,399	10.38	0.43
Employment	348	285.3	14.23	4,725	11.31	1.66	1,984	14.72	0.70
Pensions	529	163.5	8.15	6,907	16.53	4.23	1,541	11.43	0.94
Income	67	140.0	6.98	1,541	3.69	.1.10	172	1.28	0.12
Inheritance	27	39.4	1.97	743	1.78	1.89	316	2.34	0.80
Demographics	77	152.4	7.60	521	1.25	0.34	88	0.65	0.06
Health Insurance	93	93.1	4.64	1,283	3.07	1.38	293	2.17	0.31
2nd-ary familes	39	10.6	0.53	442	1.06	4.17	65	0.48	0.61
All sections	2,721	2,004.5	100.00	41,786	100.00	2.08	13,476	100.00	0.67
memo item:									
Dollar variables	496	172.5	8.60	5792	13.9	3.36	1,646	12.21	0.94
Data Changes Attributable to All Types of Edits									
HH listing	91	117.0	5.83	506	1.06	0.43	11	0.07	0.01
Institutions	79	139.9	6.98	9,212	19.28	6.59	5,615	36.39	4.01
Credit cards	73	142.6	7.11	288	0.60	0.20	104	0.67	0.07
Housing	90	55.7	2.77	556	1.35	1.15	74	0.48	0.13
Mort./LOC	158	82.9	4.13	2,280	4.77	2.75	181	1.17	0.22
Inv. real estate	189	62.6	3.14	2,618	5.48	4.16	1121	7.27	1.78
Businesses	134	60.6	3.02	1,957	4.10	3.23	542	3.51	0.89
Vehicles	176	93.8	4.67	2,523	5.28	2.69	330	2.14	0.35
Cons. loans	281	40.7	2.03	2,356	4.93	5.79	267	1.73	0.66
Fin. assets	301	324.6	16.19	5,300	11.09	1.63	1,579	10.23	0.49
Employment	348	285.5	14.23	5,403	11.31	1.89	2,327	15.08	0.82
Pensions	529	163.9	8.17	9,614	20.12	5.87	2,097	13.59	1.28
Income	67	140.0	6.98	1,849	3.87	.1.32	307	1.99	0.22
Inheritance	27	39.4	1.96	763	1.60	1.94	329	2.13	0.84
Demographics	77	152.5	7.60	594	1.24	0.39	139	0.90	0.09
Health Insurance	93	93.1	4.64	1,426	2.98	1.53	329	2.13	0.35
2nd-ary familes	39	10.6	0.53	460	1.00	4.33	76	0.49	0.72
All sections	2,721	2,005.6	100.00	47,787	100.00	2.38	15,428	100.00	0.77
memo item:									
Dollar variables	496	172.5	8.61	7252	15.80	4.37	2,583	16.74	1.50

Figure 7a: Density of Number of All Edits and All Edits Yielding New Missing Values in Any Variables, Across Interviewers; Excluding Zeroes

All edits: =0: 2.7%, median: 161
New missing: =0: 10.9%, median: 48

Figure 7b: Density of Number of All Edits and All Edits Yielding New Missing Values in Dollar Variables, Across Interviewers; Excluding Zeroes

All edits: =0: 8.2%, median 26
New missing: =0: 20.7%, median: 6

Figure 8a: Density of Mean Number of All Edits and All Edits Yielding New Missing Values in Any Variables, Across Interviewers; Excluding Zeroes

Al edits: =0: 2.7%, median: 9.0
New missing: =0: 10.9%, median: 2.6

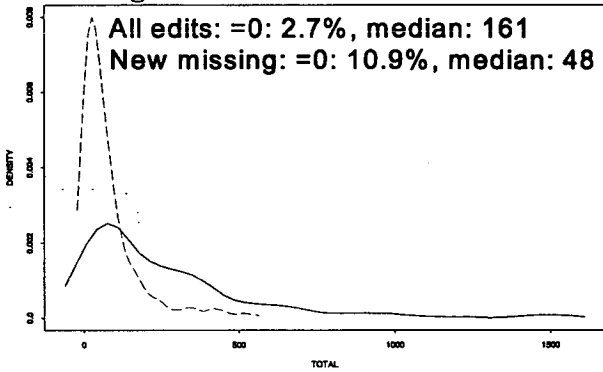**Figure 8b: Density of Mean Number of All Edits and All Edits Yielding New Missing Values in Dollar Variables, Across Interviewers; Excluding Zeroes**

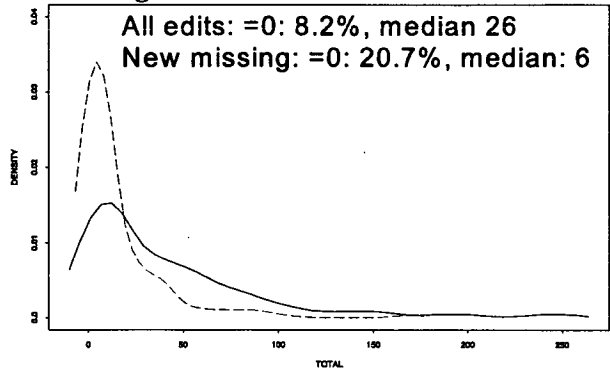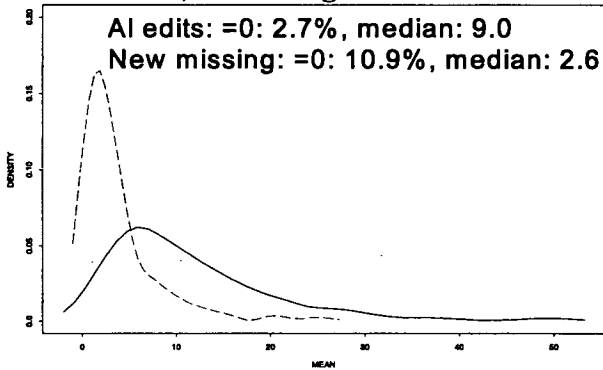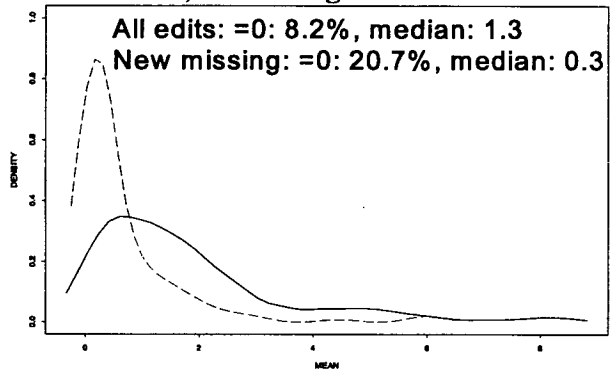All edits: =0: 8.2%, median: 1.3
New missing: =0: 20.7%, median: 0.3

the questionnaire. In such cases, interviewers are trained to record auxiliary information that might be useful in the proper recording of information later. Although such material is an important part of the auxiliary comment data, there is great heterogeneity in what is recorded. Unfortunately, there is no easy way to sort this information by its contents. Some interviewers record information that could have been fully incorporated directly into the questionnaire, while others report subtleties that allow the editors to salvage what would otherwise be missing data. Another approach is to look separately at the patterns in the "indirect" edits identified using logic rules and past experience. This approach removes the possibility of biasing the measures of data quality against in-

terviewers who were simply doing a good job of documenting problems with difficult cases. Figures 9a and 9b provide information on total edits distributed over interviewers, and figures 10a and 10b provide corresponding estimates of the means. Because only about 13 percent of edits were of this indirect nature, the overall numbers of edits are consequently smaller. Nonetheless, it is clear that there is still substantial variation over interviewer in the degree of edit problems.

■ Modeling Data Quality

If the data quality indicators above can be related to other measurable characteristics of interviewers and re-

Figure 9a: Density of Number of All Indirect Edits and All Indirect Edits Yielding New Missing Values in Any Variables, Across Interviewers; Excluding Zeroes

All edits: =0: 8.7%, median: 26
New missing: =0: 28.8%, median: 5

Figure 9b: Density of Number of All Indirect Edits and All Indirect Edits Yielding New Missing Values in Dollar Variables, Across Interviewers; Excluding Zeroes

All edits: =0: 21.2%, median: 6
New missing: =0: 33.7%, median: 4

Figure 10a: Density of Mean of All Indirect Edits and All Indirect Edits Yielding New Missing Values in Any Variables, Across Interviewers; Excluding Zeroes
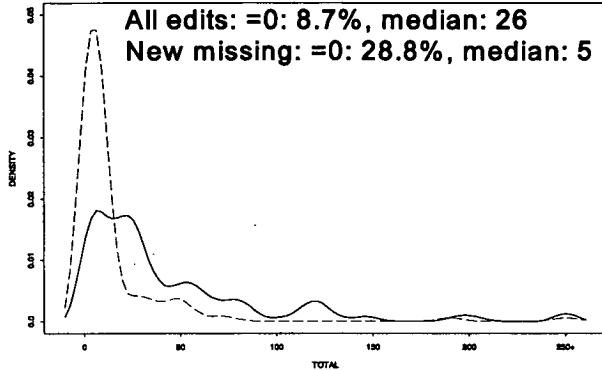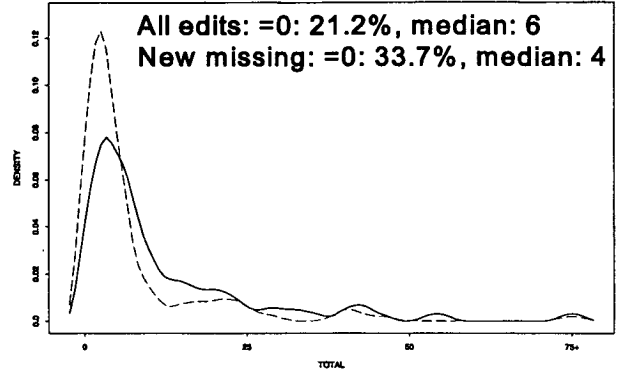
All edits: =0: 8.7%, median=1.2
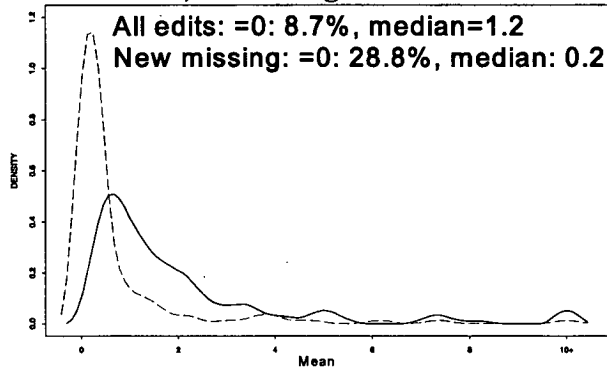New missing: =0: 28.8%, median: 0.2

Figure 10b: Density of Mean of All Indirect Edits and All Indirect Edits Yielding New Missing Values in Dollar Variables, Across Interviewers; Excluding Zeroes

All edits: =0: 21.2%, median: 0.3
New missing: =0: 33.7%, median: 0.1
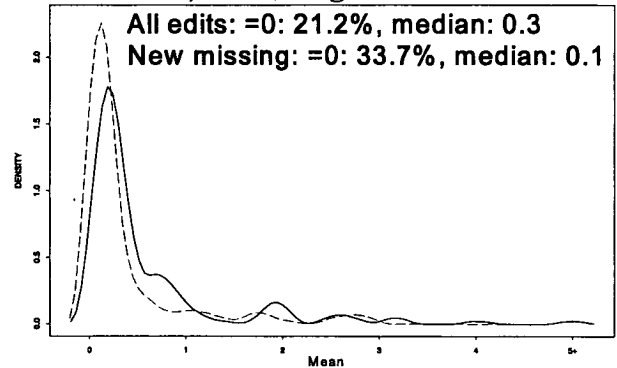
spondents, it may be possible to design interviewer training and additional respondent aids that may improve the quality of the data collected. This section develops some descriptive models to relate the quality measures developed earlier in the paper to other information about respondents, respondents' neighborhoods, and characteristics of interviewers.

Problems may arise during an interview from the respondent's reaction to the interviewer or the instrument, or from the interviewer's reaction to the respondent or the instrument. There are several dimensions that seem plausible determinants in explaining problems. For example, respondents who have relatively compli-

cated situations might be more likely to have trouble fitting their responses into the desired format. Those who are less trusting of the interview process might tend to limit the amount of information revealed. Respondents who felt more pressed for time might not devote as careful attention to the questions as others. Respondents who are more sophisticated in their understanding of questions and their ability to express themselves might be more likely to give the analytically desired responses. One would hope that experienced interviewers are more comfortable in probing respondents to answer questions and fit responses into the analytically desired framework, and that they are better able to follow the standard protocol for administering the interview. It also seems rea-

sonable to think that interviewers who have personality traits that make them outgoing and persistent should have better success in controlling the interview. Unfortunately, the data available to test these relationships are often indirect.

There are two particularly important additional obstacles to straightforward modeling. First, the assignment of cases to interviewers was nonrandom. Generally, interviewers are given an initial local assignment, and where the number of interviewers is great enough, there is an attempt to "match" interviewers to the cases where their supervisors think they will be most successful in getting an agreement to do the interview. Interviewers who are unusually good and who manage to complete their local assignments early in the field period are often offered the chance to travel to other areas with large numbers of pending cases. Unfortunately, it would be virtually impossible to control for all dimensions of selection that might be operating in this process.

Another problem is that because most interviewers completed more than one case, errors in modeling the effects of interviewers on data quality will not be independent across observations. Fortunately, this problem is more amenable to statistical treatment. In the models that follow, it is assumed that interviewer contributions to the model can be captured as fixed effects, which are then modeled in a second stage in terms of interview characteristics.

The selection of appropriate dependent variables for the analysis is not obvious. Any choice other than modeling quality indicators at the level of individual variables allowing for correlation across variables, requires aggregation. Aggregation implies something about the relative importance of the component data items. While recognizing the inherent arbitrary nature of any aggregation, ease of interpretation argues for examining a small number of key dimensions. This paper uses four indicators of data quality in coding and editing. To cover issues in coding, the paper treats the degree to which interviewers failed to code items directly that could have been field coded (CODERR), and the degree to which they failed to collect sufficient information to code items

even after expert review (NOCODE). Because of the importance of dollar amounts in the SCF, the modeling of editing focuses only on such variables. The modeling treats edits that result in any change in dollar variables ("EDOLL"), and any edits that result in a new missing value in dollar variables ("NMDOLL").

The model takes the two-stage form described in figure 11. Equation 1 is the mathematical form of the poisson model, which is the first stage. The log of the poisson parameter is specified as a linear function of a vector of respondent characteristics, and a vector of dummy variables constructed for each interviewer, scaled by the level of exposure to the relevant type of questions (equation 2). As shown in equation 3, the expected value of the number of errors or edits takes the form of a rate multiplied by the number of questions of

Figure 11: Two-Stage Model of Data Quality Indicators

1. $Pr(E_i = e) = Exp(-\lambda_i)\, (\lambda_i)^e / e!$

2. $Ln\, (\lambda_i / Q_i) = X_i\, \beta + D_{j(i)}\phi$

3. $Expected\, (E_i) = Q_i\, Exp(\, X_i\, \beta + D_{j(i)}\phi\,)$

4. $D_{j(i)}\, \phi = F_{j(i)}\gamma + \eta_{j(i)}$

Where:
E_i is the number of errors/edits for observation i
X_i is a vector of characteristics of observation i
β is a vector of parameters compatible with X
$D_{j(i)}$ is a vector of dummy variables representing each interviewer j who interviewed observation i
ϕ is a vector of parameters compatible with D
Q_i is the number of questions of the sort modeled to which observation i was exposed
$F_{j(i)}$ is a vector of characteristics of interviewer j who interviewed observation i
γ is a vector or parameters compatible with F
ϕ is the estimated value of ϕ
$\eta_{j(i)}$ is an error term reflecting a combination of estimation error in ϕ and modeling error in equation 4

the relevant type to which the subject was exposed. This stage was estimated by running the maximum likelihood poisson procedure in Stata on a subset of 4,168 observations for which the associated interviewer completed at least four cases (there were 167 such interviewers).[13] The second stage, given by equation 4, regresses the estimated individual interviewer effects from the first stage on measured interviewer characteristics. This stage was estimated using the robust regression routine in Stata.[14] Results from the first-stage estimation are given in table 3 and those from the second stage are given in table 4.[15]

Table 3: First-Stage Poisson Regression of CODERR, NOCODE, NDOLL and NMDOLL on Respondent Characteristics, Interviewer Fixed Effects, and Sample Design Elements

MODEL	CODERR	NOCODE	EDOLL	NMDOLL
CONST	-6.616#	-5.844#	-8.595#	-11.910#
	0.626	1.087	0.453	0.962
RFEE	-0.001	-0.007*	-0.007#	-0.006#
	0.002	0.003	0.001	0.002
AGER	0.001	0.005	0.002	0.012#
	0.002	0.003	0.001	0.002
NWHISP	-0.169	-0.327	-0.004	1.348*
	0.224	0.386	0.150	0.584
RHEALTH	0.044	0.028	0.023	0.014
	0.027	0.049	0.017	0.031
MARRIED	-0.341#	-0.091	-0.211#	0.092
	0.052	0.094	0.034	0.061
HHSIZE	0.039*	-0.005	0.063#	0.046*
	0.016	0.030	0.010	0.020
REDN	0.031#	-0.007	0.023#	0.024*
	0.010	0.016	0.006	0.011
INTEREST	-0.012	0.121*	0.175#	0.268#
	0.028	0.049	0.018	0.029
EXPRESS	0.020	0.047	0.095#	0.046
	0.054	0.092	0.032	0.058
UNDERSTD	0.013	0.051	0.104#	0.078
	0.053	0.092	0.031	0.056
RECORD	0.083*	-0.037	0.000	-0.293#
	0.042	0.077	0.027	0.050
SUSPA	-0.090	0.209*	0.118#	0.524#
	0.059	0.095	0.034	0.053
RWORK	-0.115*	0.009	-0.116#	-0.155#
	0.049	0.088	0.031	0.053
DHOWNER	0.012	0.279*	-0.432#	-0.256#
	0.065	0.123	0.041	0.076
TIMEAREA	-0.002	0.015	0.049#	-0.024
	0.018	0.033	0.012	0.020
NORMY	-0.007	0.006	0.110#	0.194#
	0.019	0.031	0.014	0.025
ASSETS	-0.013	-0.059#	-0.040#	0.070#
	0.013	0.021	0.008	0.017
DEBT	-0.017#	0.028#	-0.019#	-0.036#
	0.004	0.009	0.003	0.004
COMMTIME	-0.106#	0.023	0.012	-0.090*
	0.037	0.080	0.027	0.043
MHORIZ	0.015	-0.051+	-0.041#	-0.048#
	0.016	0.028	0.010	0.018
TIMEIW	0.263#	-0.019	0.369#	0.087
	0.056	0.094	0.037	0.062
DSTR1	0.216+	0.209	0.827#	1.150#
	0.113	0.201	0.058	0.108
DSTR2	0.067	0.002	0.241#	-0.153
	0.101	0.167	0.060	0.112
DSTR3	0.332#	0.076	-0.028	-0.266#
	0.080	0.161	0.058	0.100
DSTR4	0.241#	0.021	0.149#	0.026
	0.077	0.151	0.050	0.080
DSTR5	0.163*	0.301*	0.083	-0.551#
	0.081	0.144	0.052	0.091
DSTR6	0.286#	0.243	0.134*	-0.572#
	0.087	0.155	0.056	0.098
DSTR7	0.025	0.147	0.365#	-0.617#
	0.207	0.366	0.104	0.167
REG1	0.206	0.146	0.469#	0.860#
	0.203	0.367	0.129	0.226
REG2	0.111	0.061	0.510#	0.828#
	0.129	0.221	0.082	0.150
REG3	0.310*	0.486+	0.300#	0.720#
	0.154	0.278	0.095	0.170
SRPSU	0.128	0.141	0.010	-0.137+
	0.083	0.142	0.050	0.082
MSA	-0.125	-0.067	-0.247#	0.147
	0.117	0.174	0.074	0.125

Coefficients for interviewer-specific dummy variables are not shown

LR{H_0 $\varphi_i=0$ $\forall$ i}

	CODERR	NOCODE	EDOLL	NMDOLL
	524#	590#	2874#	2402#
N	4168	4168	4168	4168

#=p-value<=1%, *=pvalue<=5%, +=p-value<=10%

Table 4: Second Stage Regression of Estimated Interviewer Fixed Effects for CODERR, NOCODE, NDOLL, and NMDOLL Models on Interviewer Characteristics

MODEL	CODERR	NOCODE	EDOLL	NMDOLL
CONST	1.228*	3.419*	-1.623+	-5.836#
	0.719	1.589	1.158	2.228
LIWEREXP	-0.074#	0.023	-0.107#	-0.127*
	0.020	0.044	0.032	0.061
DISCF	-0.015	-0.394*	-0.132	-0.627*
	0.099	0.218	0.159	0.306
LIAGE	-0.125	-0.302	0.576#	1.342#
	0.144	0.318	0.232	0.446
ICOLLEGE	0.022	-0.076	0.222+	0.038
	0.087	0.193	0.141	0.271
ITYPEF	0.409#	0.332+	0.165	0.500*
	0.094	0.207	0.151	0.291
ITYPES	0.245#	0.232	-0.239+	0.076
	0.095	0.211	0.154	0.296
IRESEAR	0.187#	0.150	0.206*	0.300+
	0.071	0.156	0.114	0.219
INEIGHB	0.057	-0.165+	-0.083	-0.140
	0.057	0.126	0.092	0.177
DFIGURE	-0.127#	0.044	-0.148*	0.066
	0.047	0.105	0.076	0.147
DIGET	-0.057*	-0.109+	-0.044	-0.070
	0.033	0.074	0.054	0.104
DIRRESP	-0.081*	0.127+	-0.013	0.072
	0.036	0.080	0.058	0.112
IOUTGO	-0.031	-0.028	0.144*	0.119
	0.049	0.108	0.078	0.151
DCONOUT	-0.090#	-0.207#	-0.146#	-0.125
	0.033	0.073	0.053	0.103
LCOUNT	-0.098*	-0.390#	0.101	0.091
	0.059	0.129	0.094	0.181
N	120	120	120	120

The data provide strong support for the overall importance of interviewers effects in each model: a likelihood ratio test of H_0: { $\phi_i = 0$, $\forall i$} is rejected at less than the one percent level. The first-stage results also support the claim that respondent characteristics are important in explaining the aspects of data quality modeled, though the interpretation of the results is not always straightforward. The data suggest that payment of incentives to respondents to participate in the survey was negatively associated with the problem rates, as one might reasonably expect as part of the "bargain." There is an indication that the rate of problems "scales up" with household size, probably as a consequence of relatively greater complexity. Older respondents appear more likely to have higher rates of new missing data in editing. Curiously, more educated respondents had higher error rates in all the models except that for NOCODE. As one might expect, there are also indications that respondents who were less interested in the interview, had a less good understanding of the questions, or did not express themselves clearly had more problems. Comfortingly, respondents who used records has a lower rate of problems. Respondents who showed signs to the interviewer of being suspicious after the interview were more likely to have had problems in their data. The rates of dollar edits and new missing values are positively associated with income, but assets and debts show a mixed pattern. Other work with the data suggest that these factors are picking up two dimensions: on the one hand, respondents with higher levels of income and wealth often tend to be less cooperative with the survey process, and on the other hand, such people have greater levels of financial sophistication that would make it more likely that they would understand the intent of the survey questions. Contrary to expectation, there is some suggestion that average commuting time in the census tract is associated with *lower* error rates for CODERR and NMDOLL. Interview length is positively associated with higher levels of CODERR and EDOLL, possibly an effect of the actual length of time required to accommodate confusing responses through interviewer comments, or of some other aspect of a higher level of complexity among such cases.

In earlier explorations using OLS to estimate the second stage of the model, there was very little consistent sensible variation despite the strong overall significance of interviewer effects. Robust regression reveals somewhat more structure (table 4). Interviewers with longer years of experience, and those with experience on the SCF tend to have lower levels of EDOLL and NMDOLL. Such interviewers appear to be better at capturing data correctly within the instrument and record-

ing information that is useful to support unusual situations. For the coding variables, the effect of experience is weaker. Older interviewers are more likely to have dollar edits and new missing values, but there is no significant difference in their coding outcomes. There is some indication that interviewers who are proficient typists are more likely to have problems, perhaps because it is relatively easier for them to record responses verbatim than to probe the respondent. The effects of the self-reported attitudes are generally weak and occasionally inconsistent. One interesting such variable is the confidence that interviewers have that NORC would protect the identifying information in the survey. Interviewers who expressed higher levels of confidence had significantly lower rates of all types of errors except NMDOLL. Interviewers who completed large numbers of cases tended to have fewer uncodeable verbatim responses, but also to have more edits to dollar variables. Because the better interviewers are often assigned to the most difficult cases, the former may reflect skill directly while the latter reflects the disproportionate assignment of cases that are difficult in ways not picked up by the first-stage model.

■ Conclusions and Future Research

This paper has examined data quality in two important dimensions of the 1998 SCF: coding and editing. As a byproduct, the analysis has led to the identification of question sequences that need particular attention in the revisions of the instrument and in the design of future interviewer training. In some cases, the results suggest that it may also be important to develop other means to orient respondents to the desired data reporting framework.

The results of the modeling exercise provide at least some evidence of systematic variations in coding and editing problems over different types of respondents and interviewers. However, the data do not provide as much structural insight as one would like. For the future, two additional sources of information would be very helpful in identifying the sources of data quality problems. First, it would be helpful to have a set of objective measures of interviewers' abilities in addition to the self-reported information available now. Second, it would be useful to have information directly from the survey respondents

on their impressions about the interview. Perhaps to encourage frankness, a short series of questions about the interviewer and the interview could be left with the respondent after the interview for the respondent to complete and mail in independently.

Another important facet of data quality that is not explored in this paper is the effect of data changes on the ultimate estimates using the data. The presumption has always been that the SCF data should be as correct as possible, without going to the point that highly unusual, but legitimate, variations in the data are suppressed. However, so far there is no broad quantitative measure of the benefits of such review. One possibility, to be developed in a subsequent paper, is to compare a set of analyses using the fully reviewed and imputed data to the same analyses using an imputed version of the edited data. Given the available software for the SCF, it should be straightforward to construct the additional dataset. Obviously, it is highly likely that the data review greatly damps spurious swings for some variables in tail-sensitive measures, such as the mean and concentration ratios, but it is not clear how much other measures typically viewed as being more robust, such as the median, are affected.

■ Acknowledgment

■ Footnotes

[1]   See Kennickell, Starr-McCluer and Sundén [1997] for an overview of the SCF.

[2]   The statistics for the 1998 dataset throughout this paper are based on a version of the dataset that has

been rearranged into the form of the public dataset. This form collapses multiple versions of the same question into one field, and it includes responses that can be computed from other answers given by the respondent. In the original form retained by the CAPI program, there are 9,598 variables in the survey.

3   See Kennickell [1998] for a more extended discussion of the sample.

4   See Kennickell [1999] for additional information on response rates.

5   In a relatively small number of instances, the survey questions were completely open-ended. A particularly important such case is the sequence used to code industry and occupation for respondents' current and past jobs.

6   A part of the work of each coder was coded independently by another coder as a check on the reliability of the process. Based on an ex post review of the codes and underlying verbatim responses, it appears that the codes assigned at this level are highly reliable.

7   In the case of multiple-response fields, only the status of the first response is included in these calculations. Including the higher-order responses would increase the proportions of problems.

8   Although the focus in this paper is on interviewers, questions wording, CAPI screen design and respondent characteristics are equally important sources of error.

9   Examination of errors as a fraction of the applicable codeable responses yields essentially the same information.

10   In these density estimates figures and the ones that follow, the estimates exclude zero values. In each case, the percent of zero values is shown on the figure.

11   The second section of the appendix provides a list

of variables that had 25 or more edits, and a list of variables that acquired 10 or more new missing values as a result of editing. Because there are frequently multiple iterations of a question in the SCF, the grouping by individual variables understates the level of problems with some questions. Nonetheless, such questions with the most serious problems had sufficient problems with at least one iteration to be included in this list.

12   The questions associated with these groupings are given in the third section of the appendix.

13   The data used for estimation were the singly-imputed first imputation iteration of the 1998 SCF.

14   Because the dependent variable is estimated using a different number of observations for different interviewers, the error term is heteroskedastic. Because the robust regression model does not allow an input weight, the model was run on the 3,416 observations corresponding to the set of interviewers who completed the interviewer questionnaire and who completed at least four cases. Standard errors were adjusted to reflect the artificial inflation of the sample size.

15   Definitions of the variables used are given in the fourth section of the appendix.

■ Bibliography

Kennickell, Arthur B. [1998] "List Sample Design for the 1998 Survey of Consumer Finances," working paper, Federal Reserve Board.

Kennickell, Arthur B. [1999] "Revisions to the SCF Weighting Methodology: Accounting for Race/Ethnicity and Homeownership," working paper, Board of Governors of the Federal Reserve System.

Kennickell, Arthur B., Martha Starr-McCluer, and Annika E. Sundén [1997] "Changes in Family Finances in the U.S." Federal Reserve Bulletin, January, pp. 1-24.

■ Appendix

1. Variables with High Number of Coding Errors*

Variables with Ten or More Instances of NOCODE (in ascending order)

X320	Q48A4 - A6. TYPE OF INSTITUTION
X3530	Q770 - N9. REASON CHOSE INSTITUTION
X7583	Q70 - B3_5. WHY TURNED DOWN?
X822	Q262A1 - D39_1V. WHAT OTHER RATE?
X1703	Q405A1 - E16. TYPE OF PROPERTY
X7401	Q992A1 - R3. OFFICIAL JOB TITLE
X7127A	Q487A1 - A5_10_5. SORTS OF PAYMENTS
X6316A	Q1521A1 - Y31. HOW COVERAGE OBTAINED
X3503	Q753 - N2_1. REASON NO CHECKING ACCOUNT
X4437	Q1133A1 - R39_1. WHAT OTHER PLANS?
X7416	Q1151A2 - R45_5. WHAT KIND OF BUSINESS
X7409	Q1246A1 - R47_7. WHAT SORT OF WORK
X7420	Q1247A2 - R47_8. WHAT KIND OF BUSINESS
X7411	Q992A2 - R3. OFFICIAL JOB TITLE
X7402	Q994A1 - R5. WHAT KIND OF BUSINESS
X7412	Q993A2 - R4. WHAT DO YOU DO
X7415	Q1150A2 - R45_4. WHAT SORT OF WORK
X7406	Q1151A1 - R45_5. WHAT KIND OF BUSINESS
X7405	Q1150A1 - R45_4. WHAT SORT OF WORK
X7419	Q1246A2 - R47_7. WHAT SORT OF WORK
X7123A	Q73A1 - A5_10_3. KINDS OF DEPOSITS
X6600	Q50A1B1 - A7. HOW DO BUSINESS W/ INSTIT
X415	Q88A1B1 - B10. WHICH INSTITUTION
X6640	Q50A6B1 - A7. HOW DO BUSINESS W/ INSTIT
X6765	Q1358 - T4_05. WHY INC UNUSUALLY HIGH?
X819	Q258A1 - D38. REASON CHOSE LENDER
X6632	Q50A5B1 - A7. HOW DO BUSINESS W/ INSTIT
X726	Q221 - D25. FHA, VA, OR OTHER PROGRAM?
X6624	Q50A4B1 - A7. HOW DO BUSINESS W/ INSTIT
X727	Q223 - D26. WHY THIS LOAN?
X6616	Q50A3B1 - A7. HOW DO BUSINESS W/ INSTIT
X6608	Q50A2B1 - A7. HOW DO BUSINESS W/ INSTIT

Variables with Ten or More Instances of CODERR (in ascending order)

X7603	Q764A2 - N6_2. JOINT, YOUR, SPOUSES NAME
X4015	Q949 - N49_10F. FREQ OF PAYMENT

*In this section and those that follow, the variable names correspond to those given in the codebook for the 1998 Survey of Consumer Finances.

X5811	Q1394A2 - X6. FROM WHOM RECEIVED?
X2605	Q626A2 - G26. WHAT TYPE OF OTHER VEHICLE
X6600	Q50A1B1 - A7. HOW DO BUSINESS W/ INSTIT
X726	Q221 - D25. FHA, VA, OR OTHER PROGRAM?
X2303	Q580A2 - G8. TYPE OF VEHICLE
X6308A	Q1518A1 - Y29_4. WHO IS NOT COVERED?
X3219	Q500A2 - F9_4. LEGAL FORM OF CORPORATION
X3403	Q536 - F20_2. TYPE OF CORPORATION
X4706	Q990A2 - R2. EMPLOYED BY ELSE OR SELF?
X5307	Q1297A1 - R96_6F. FREQ PMTS RECEIVED
X6828A	Q908A2B1 - N42.TRUST, MANAGE INVEST?
X7622	Q825A1 - N25_2.JOINT, YOUR, SPOUSES NAME
X7624	Q825A2 - N25_2.JOINT, YOUR, SPOUSES NAME
X4334	Q1127A12 - R37. HOW INVESTED?
X1804	Q406A2 - E17. OWNED BY R, JOINT, PARTNER
X7620	Q814 - N22_4. JOINT, YOUR, SPOUSES NAME?
X3503	Q753 - N2_1. REASON NO CHECKING ACCOUNT
X6640	Q50A6B1 - A7. HOW DO BUSINESS W/ INSTIT
X4202	Q1051A11 - R19. PENSION OR TAX-DEFER SAV
X4834	Q1127A21 - R37. HOW INVESTED?
X6608	Q50A2B1 - A7. HOW DO BUSINESS W/ INSTIT
X1404	Q371A1 - E3. LAND/MORTGAGE/ELSE
X2203	Q580A1 - G8. TYPE OF VEHICLE
X2742	Q728A2 - I14. LOAN INSTITUTION ON CARD
X5102A	Q1136A2A - R40_1.JOB, MILITARY, BUSINESS
X6238A	Q1507A1 - Y28_2. HOW COVERAGE PAID
X5735A	Q1371A1 - T6_2. TO WHOM SUPPORT GIVEN?
X4515	Q1148A1 - R45_3. LONGEST JOB: ELSE/SELF?
X6302A	Q1514A1 - Y29_1. WHICH PROGRAM?
X6616	Q50A3B1 - A7. HOW DO BUSINESS W/ INSTIT
X5316	Q1303A1 - R97_3. PMT FROM WHERE? (JOB?)
X6337	Q1533 - Y32. WHY NO HEALTH INSURANCE?
X6826	Q921A1 - N46.HOW ANNUITY MONEY INVESTED?
X6624	Q50A4B1 - A7. HOW DO BUSINESS W/ INSTIT
X5806	Q1394A1 - X6. FROM WHOM RECEIVED?
X308	Q48A1 - A6. TYPE OF INSTITUTION
X4502A	Q1136A1A - R40_1.JOB, MILITARY, BUSINESS
X1704	Q406A1 - E17. OWNED BY R, JOINT, PARTNER
X7584	Q67 - B3_3. TYPE OF CREDIT APPLIED FOR
X7127A	Q487A1 - A5_10_5. SORTS OF PAYMENTS
X4234	Q1127A11 - R37. HOW INVESTED?
X6678	Q979A2B1 - R1. PRESENT JOB STATUS
X6841	Q921A2 - N46. HOW TRUST MONEY INVESTED?
X3108	Q491A1 - F6. BUY, START, INHERIT, GIVEN?
X6105	Q1466 - Y13_4. S HIGHEST DEGREE?
X3119	Q500A1 - F9_4. LEGAL FORM OF CORPORATION

X6809   Q1417A1 - Y4. R RACE
X6775A   Q1602A1 - R98_7. DO WITH CASH SETTLEMENT
X6233A   Q1505A1 - Y28_1. HOW COVERAGE OBTAINED
X7123A   Q73A1 - A5_10_3. KINDS OF DEPOSITS
X4106   Q990A1 - R2. EMPLOYED BY ELSE OR SELF?
X6324A   Q1523A1 - Y31_1. HOW COVERAGE PAID
X312   Q48A2 - A6. TYPE OF INSTITUTION
X328   Q48A6 - A6. TYPE OF INSTITUTION
X5803   Q1389A1 - X3. TRUST, INHERITANCE, WHAT?
X7507   Q746 - J9_3. MAKE UP DIFFERENCE
X6670   Q979A1B1 - R1. R PRESENT JOB STATUS
X5905   Q1414 - Y1_4. R HIGHEST DEGREE?
X3530   Q770 - N9. REASON CHOSE INSTITUTION
X316   Q48A3 - A6. TYPE OF INSTITUTION
X7101   Q36A1 - A3_1. INFO USED FOR BORROW DECI
X3011   Q736A1 - J2_1. WHAT KINDS OF OBLIGATIONS
X6316A   Q1521A1 - Y31. HOW COVERAGE OBTAINED
X324   Q48A5 - A6. TYPE OF INSTITUTION
X320   Q48A4 - A6. TYPE OF INSTITUTION
X7112   Q39A1 - A4_1. HOW MAKE INVEST DECISIONS
X819   Q258A1 - D38. REASON CHOSE LENDER
X3631   Q787 - N15. HOW IS IRA/KEOGH INVESTED?
X415   Q88A1B1 - B10. WHICH INSTITUTION

2. Variables with Large Number of Edit Changes

Variables with 25 or More Edit Changes of Any Sort (in ascending order)

X724   Q219 - D24.FEDERALLY GUARANTEED MORTGAGE
X809   Q239A1 - D31F. FREQ REGULAR MORTGAGE PMT
X811   Q246A1 - D33. BE A BALLOON PAYMENT?
X819   Q258A1 - D38. REASON CHOSE LENDER
X2712   Q706A1 - I5. MONTH OTHER LOAN TAKEN OUT
X3613   Q777A2 - N11. NUMBER OF IRA/KE ACCOUNTS
X3802   Q817 - N23_1. NUM OF OTHER ACCOUNTS(FIN)
X4014   Q947 - N49_10. AMT OF PMT ON POLICY
X4115   Q1005A1 - R10YRS. YEARS WORKED FOR EMP
X7679   Q1007A1 - R10YR. SINCE WHAT YEAR?
X7209   Q1091A11 - R29AGE. SINCE WHAT AGE?
X7210   Q1092A11 - R29YR. SINCE WHAT YEAR?
X4217   Q1090A11 - R29YRS. # OF YEARS IN PLAN
X4835   Q1130A21 - R38. ANOTHER PLAN?
X5714   Q1353A7 - T2. AMOUNT OF INCOME
X6307   Q1517 - Y29_3. HAVE HEALTH COVERAGE?
X6422   Q1556 - Y37_2. INCLUDE ACCOUNTS EARLIER?
X7001   # OF PEOPLE IN PEU

X6627	Q50A4B4 - A7. HOW DO BUSINESS W/ INSTIT
X6628	Q50A4B5 - A7. HOW DO BUSINESS W/ INSTIT
X6629	Q50A4B6 - A7. HOW DO BUSINESS W/ INSTIT
X6630	Q50A4B7 - A7. HOW DO BUSINESS W/ INSTIT
X6631	Q50A4B8 - A7. HOW DO BUSINESS W/ INSTIT
X801	Q225A1 - D27M. MONTH MORTGAGE OBTAINED
X810	Q245A1 - D32.PAYMENT INCLUDE TAX/INSURE?
X1032	Q274 - D41. OWE ON OTHER LOANS FOR PROP?
X2001	Q449 - E36. ANY PROPS VACATION HOMES?
X2011	Q465 - E36_8. ANY REMAINING PROPERTIES?
X7153	Q585A4 - G11. BOUGHT NEW OR USED?
X2212	Q594A1 - G16YRS. NUMBER OF YEARS
X2503	Q623 - G25. OWN ANY OTHER TYPE VEHICLES?
X7182	Q702 - I1. DO YOU HAVE ANY OTHER LOANS?
X2713	Q707A1 - I5. YEAR OTHER LOAN TAKEN OUT
X2715	Q710A1 - I7. REG INSTALL OR OTHER TYPE?
X7603	Q764A2 - N6_2. JOINT, YOUR, SPOUSES NAME
X3513	Q758A3 - N4. WHICH INSTITUTION
X3607	Q780A1B2 - N13. WHICH INSTITUTION
X5703	Q1351A2 - T1.OTHER INCOME FROM BUSINESS?
X5712	Q1353A6 - T2. AMOUNT OF INCOME
X6616	Q50A3B1 - A7. HOW DO BUSINESS W/ INSTIT
X318	Q53A3 - A8A. # OF MILES TO INSTITUTION
X3134	Q527A1 - F19. ANOTHER BUSINESS?
X2211	Q595A1 - G16PAY. NUMBER OF PAYMENTS
X3705	Q795A1 - N19. WHICH INSTITUTION
X3803	Q819A1 - N24. WHICH INSTITUTION
X3833	Q846 - N30_1B. AMOUNT GAIN
X4015	Q949 - N49_10F. FREQ OF PAYMENT
X4225	Q1117A11 - R34_2C. FREQ OF CONTRIBUTION
X7399	Q1514A4 - Y29_1. ELIGIBLE FOR CHAMPUS?
X6301	Q1513 - Y29. ELIG GVMT HEALTH INS-R'S HH
X6304	Q1514A3 - Y29_1. ELIGIBLE FOR VA?
X6404	Q1539 - Y34_2. INCLUDE THIS AMT EARLIER?
X6626	Q50A4B3 - A7. HOW DO BUSINESS W/ INSTIT
X1809	Q414A2 - E20. TOTAL PURCHASE PRICE
X2505	Q626A1 - G26. WHAT TYPE OF OTHER VEHICLE
X3820	Q842 - N27_1. TOTAL NUMBER MUTUAL FUNDS
X4713	Q999A2 - R8F. FREQ OF EARNINGS REPORTED
X4715	Q1005A2 - R10YRS. YEARS WORKED FOR EMP
X7199	Q1006A1 - R10AGE. SINCE WHAT AGE?
X7706	Q1007A2 - R10YR. SINCE WHAT YEAR?
X4326	Q1119A12 - R35. AMOUNT IN ACCOUNT
X5806	Q1394A1 - X6. FROM WHOM RECEIVED?
X6303	Q1514A2 - Y29_1. ELIGIBLE FOR MEDICAID?
X808	Q237A1 - D31.AMT OF REGULAR MORTGAGE PMT

X820	Q260A1 - D39. ADJUSTABLE RATE LOAN?
X2724	Q727A1 - I13. CURRENT APR
X6800	Q1424A2 - N29_7. INSTITUTION
X4226	Q1119A11 - R35. AMOUNT IN ACCOUNT
X4820	Q1096A21 - R30_2B. AMOUNT/VARIABLE PAID
X6315	Q1520 - Y30. HAVE HEALTH COVERAGE?
X701	Q184 - D16.OWN, RENT, CONDO ASSOCIATION?
X802	Q226A1 - D27Y. YEAR MORTGAGE OBTAINED
X7150	Q580A4 - G8. TYPE OF VEHICLE
X7155	Q587A4 - G12. MONEY STILL OWED
X2320	Q610A2 - G22. LOAN INSTITUTION ON CARD
X7538	Q586A3 - G11_1. WHAT YEAR BOUGHT
X7846	Q696A2 - H15. LOAN INSTITUTION ON CARD
X2714	Q708A1 - I6. HOW MUCH BORROWED
X4202	Q1051A11 - R19. PENSION OR TAX-DEFER SAV
X4216	Q1087A11 - R28. WHAT TYPE? (THRIFT,401K)
X4224	Q1115A11 - R34_2B. AMOUNT CONTRIBUTED
X4302	Q1051A12 - R19. PENSION OR TAX-DEFER SAV
X6643	Q50A6B4 - A7. HOW DO BUSINESS W/ INSTIT
X6644	Q50A6B5 - A7. HOW DO BUSINESS W/ INSTIT
X6645	Q50A6B6 - A7. HOW DO BUSINESS W/ INSTIT
X6646	Q50A6B7 - A7. HOW DO BUSINESS W/ INSTIT
X6647	Q50A6B8 - A7. HOW DO BUSINESS W/ INSTIT
X7122	Q72 - A5_10_2. HAVE ANY DIRECT DEPOSITS?
X7123	Q73A1 - A5_10_3. PAYCHECK DEPOSITS?
X7125	Q73A5 - A5_10_3. OTHER DEPOSITS?
X718	Q209 - D20GFT.GIFT/INHERIT OR R PURCHASE
X1806	Q409A2 - E18. WORTH IF SOLD TODAY
X2726	Q731A1 - I15. ANOTHER LOAN
X2742	Q728A2 - I14. LOAN INSTITUTION ON CARD
X5301	Q1286 - R96. RECEIVING SOC SEC/CURR PENS
X5720	Q1353A11 - T2. AMOUNT OF INCOME
X5802	Q1387 - X2. NUMBER OF INHERITANCES(FIN)
X6703	Q1387 - X2. NUMBER OF INHERITANCES(RAW)
X6302	Q1514A1 - Y29_1. ELIGIBLE FOR MEDICARE?
X6306	Q1516 - Y29_2. IS EVERYONE COVERED?
X7124	Q73A2 - A5_10_3. SOCIAL SEC DEPOSITS?
X6858	Q73A3 - A5_10_3.PENSION/RETRMT DEPOSITS?
X6859	Q73A4 - A5_10_3. ROYALTIES DEPOSITS?
X805	Q232A1 - D29. AMOUNT STILL OWED
X806	Q235A1 - D30YS. NUMBER OF YEARS
X1112	Q316A1 - D53_8. WHICH INSTITUTION
X7568	Q255A1 - D36_1.SAME INSTIT AS ORIG LOAN?
X3132	Q525A1 - F17. BUS TOTAL NET INCOME IN 97
X7172	Q613A4 - G23. OWN ANOTHER VEHICLE?
X2723	Q725A1 - I12. HOW MUCH STILL OWED

X3510	Q761A2 - N5. AMOUNT IN CHECKING ACCOUNT
X3604	Q779A1 - N12. IRA OR KEOGH?
X4019	Q956 - N52. HAVE ANY OTHER ASSETS?
X7266	Q1006A2 - R10AGE. SINCE WHAT AGE?
X4223	Q1114A11 - R34_2A. PERCENT CONTRIBUTED
X4303	Q1053A12 - R20. FORMULA OR ACCOUNT PLAN
X4819	Q1095A21 - R30_2A. PERCENT PAID
X6635	Q50A5B4 - A7. HOW DO BUSINESS W/ INSTIT
X6636	Q50A5B5 - A7. HOW DO BUSINESS W/ INSTIT
X6637	Q50A5B6 - A7. HOW DO BUSINESS W/ INSTIT
X6638	Q50A5B7 - A7. HOW DO BUSINESS W/ INSTIT
X6639	Q50A5B8 - A7. HOW DO BUSINESS W/ INSTIT
X6642	Q50A6B3 - A7. HOW DO BUSINESS W/ INSTIT
X716	Q207 - D19. CURRENT VALUE OF HOME/PROP
X721	Q214 - D22. AMOUNT OF REAL ESTATE TAXES
X1831	Q448A2 - E35. ANOTHER PROPERTY?
X7152	Q582A4 - G10. WHAT MODEL YEAR
X6694	Q703 - I2. HOW MANY OTHER LOANS(RAW)
X2709	Q703 - I2. HOW MANY OTHER LOANS(FIN)
X7350	Q1335A2 - R99_3_1. LUMP SUM OR REG PMT?
X4203	Q1053A11 - R20. FORMULA OR ACCOUNT PLAN
X5612	Q1336A2 - R99_4. AMOUNT IN ACCOUNT
X6634	Q50A5B3 - A7. HOW DO BUSINESS W/ INSTIT
X723	Q218 - D23. MORTGAGE OR LAND CONTRACT?
X6689	Q486 - F4_1. HOW MANY ACTIVE MANAGEMENT(
X3508	Q766A1 - N7. ANOTHER CHECKING ACCOUNT?
X3509	Q758A2 - N4. WHICH INSTITUTION
X3601	Q774 - N10. HAVE ANY IRA/KEOGH ACCOUNTS
X3822	Q834A1 - N29. TOTAL MKT VAL STOCK FUNDS
X7736	Q1308A1 - R97_4. RECEIVED SINCE YEAR
X7332	Q1307A1 - R97_4AGE. RECEIVED SINCE AGE
X5317	Q1306A1 - R97_4YRS. # OF YEARS RECEIVED
X5807	Q1396A1 - X7. ANOTHER INHERITANCE?
X6641	Q50A6B2 - A7. HOW DO BUSINESS W/ INSTIT
X830	Q272A1 - D40.SECOND MORT/LAND CONTRACT?
X931	Q273A1 - D40_1.OTHERS W/PROP AS COLLAT?
X3512	Q766A2 - N7. ANOTHER CHECKING ACCOUNT?
X3620	Q783A2 - N14. TOTAL AMOUNT IN ACCOUNTS
X3622	Q776A3 - N10_1. IRA/KEOGH ACCOUNTS OTHER
X4113	Q999A1 - R8F. FREQ OF EARNINGS REPORTED
X4335	Q1130A12 - R38. ANOTHER PLAN?
X5307	Q1297A1 - R96_6F. FREQ PMTS RECEIVED
X6625	Q50A4B2 - A7. HOW DO BUSINESS W/ INSTIT
X804	Q230A1 - D28. AMT BORROWED OR REFINANCED
X1731	Q448A1 - E35. ANOTHER PROPERTY?
X3105	Q486 - F4_1. NUM ACTIVE MANAGEMENT(FIN)

X2522	Q656A1 - G39. OWN ANOTHER VEHICLE?
X3914	Q871 - N36. NUMBER OF DIFFERENT STOCKS
X5616	Q1342A2 - R99_6. AMT OF EXPECTED PMTS
X5805	Q1393A1 - X5. YEAR RECEIVED
X807	Q236A1 - D30PAY. NUMBER OF PAYMENTS
X6692	Q624 - G25_1. HOW MANY MOTORHOME, RV, BO
X7539	Q586A2 - G11_1. WHAT YEAR BOUGHT
X3605	KEOGH ACCOUNT?
X4020	Q958A1 - N52_1.WHAT KIND OF ASSET?
X4135	Q1039A1 - R15. ANY PENSIONS THRU JOB?
X5801	Q1386 - X1. EVER RECEIVED INHERITANCE?
X6329	Q1529 - Y31_3. EACH IN HH INSURED?
X7541	Q585A3 - G11. BOUGHT NEW OR USED?
X7752	Q1339A2 - R99_5YS. EXPECT IN # YEARS
X7351	Q1341A2 - R99_5YR. EXPECT IN YEAR
X5611	Q1334A2 - R99_3. INC FORMULA, ACCT, BOTH
X5615	Q1340A2 - R99_5AG. EXPECT AT AGE
X5617	Q1344A2 - R99_6F. FREQ OF EXPECTED PMTS
X4022	Q960A1 - N52_2. VALUE HAVE IN ASSET
X722	Q216 - D22F. FREQ OF REAL ESTATE TAXES
X917	Q252A2 - D36. WHICH INSTITUTION
X1728	Q442A1 - E33. WHICH INSTITUTION
X7542	Q585A2 - G11. BOUGHT NEW OR USED?
X6695	Q756 - N3.NUMBER OF CHECKING ACCOUNTS(RA
X4140	Q1047A1 - R17_1.CURRENTLY RECEIVING PMTS
X5803	Q1389A1 - X3. TRUST, INHERITANCE, WHAT?
X6633	Q50A5B2 - A7. HOW DO BUSINESS W/ INSTIT
X6688	Q403 - E15. PROPERTIES W/INTEREST IN(RAW
X6698	Q1049A1 - R17_3. NUMBER OF PLANS(RAW)
X717	Q212 - D21. COST OF HOME/LAND
X2306	Q587A2 - G12. MONEY STILL OWED
X2504	Q624 - G25_1. # RV, MOTORHOMES(FIN)
X3612	Q776A2 - N10_1. IRA/KEOGH ACCOUNTS SP/P
X5701	Q1351A1 - T1. WAGE AND SALARY INCOME?
X2406	Q587A3 - G12. MONEY STILL OWED
X3631	Q787 - N15. HOW IS IRA/KEOGH INVESTED?
X6305	Q1514A5 - Y29_1. ELIGIBLE FOR OTHER?
X3602	Q776A1 - N10_1. IRA/KEOGH ACCOUNTS YOURS
X4139	Q1046A1 - R17. NUMBER OF PLANS
X1701	Q403 - E15. PROP W/INTEREST INC(FIN)
X2403	Q580A3 - G8. TYPE OF VEHICLE
X3915	Q872 - N37. TOTAL MARKET VALUE OF STOCKS
X5614	Q1333A2 - R99_2. R OR S RECEIVE BENEFIT?
X5721	Q1351A10 - T1. PENSION, ANNUITIES?
X2221	Q613A1 - G23. OWN ANOTHER VEHICLE?
X2303	Q580A2 - G8. TYPE OF VEHICLE
X3603	Q777A1 - N11. NUMBER OF IRA/KEO ACCOUNTS

X4023	Q962A1 - N52_3. ANY OTHER ASSETS?
X5306	Q1295A1 - R96_6. AMOUNT RECEIVED
X5321	Q1314A1 - R97_7. CHECKPOINT: R MARRIED?
X322	Q53A4 - A8A. # OF MILES TO INSTITUTION
X816	Q251A1 - D35. ANNUAL INT RATE ON LOAN
X3924	Q893A1 - N40_1.WHICH INSTITUTION
X5315	Q1302A1 - R97_2. R OR S RECEIVING PMT?
X6640	Q50A6B1 - A7. HOW DO BUSINESS W/ INSTIT
X330	Q53A6 - A8A. # OF MILES TO INSTITUTION
X5804	Q1391A1 - X4. APPROX VALUE WHEN RECEIVED
X3504	Q756 - N3. NUM OF CHECKING ACCTS(FIN)
X6624	Q50A4B1 - A7. HOW DO BUSINESS W/ INSTIT
X5316	Q1303A1 - R97_3. PMT FROM WHERE? (JOB?)
X5319	Q1311A1 - R97_5F. FREQ AMT RECEIVED
X6419	Q1551 - Y36_2. INCLUDE VEHICLE EARLIER?
X6836	Q918A2B1 - N45. WHICH INSTITUTION
X7737	Q1318A1 - R97_9. ANOTHER BENEFIT?
X5318	Q1309A1 - R97_5. AMOUNT RECEIVED
X6700	Q1300 - R97_1. HOW MANY PAYMENTS RECEIVI
X5314	Q1300 - R97_1. NUM PMTS RECEIVE?(FIN)
X4235	Q1130A11 - R38. ANOTHER PLAN?
X6632	Q50A5B1 - A7. HOW DO BUSINESS W/ INSTIT
X326	Q53A5 - A8A. # OF MILES TO INSTITUTION
X4201	Q1049A1 - R17_3. NUMBER OF PLANS(FIN)
X5313	Q1299 - R97. RECEIVING OTHER RETIREMENT?
X2405	Q582A3 - G10. WHAT MODEL YEAR
X3610	Q783A1 - N14. TOTAL AMOUNT IN ACCOUNTS
X2421	Q613A3 - G23. OWN ANOTHER VEHICLE?
X6821	Q918A1B1 - N45. WHICH INSTITUTION
X5610	Q1346A1 - R99_7. ANOTHER FUTURE BENEFIT?
X5704	Q1353A2 - T2. AMOUNT OF INCOME
X2321	Q613A2 - G23. OWN ANOTHER VEHICLE?
X7361	Q1581 - T2_1. CALC TOTAL INCOME CORRECT?
X7348	Q1335A1 - R99_3_1. LUMP SUM OR REG PMT?
X2205	Q582A1 - G10. WHAT MODEL YEAR
X3616	Q780A2B1 - N13. WHICH INSTITUTION
X6799	Q1424A1 - N29_7. INSTITUTION
X4220	Q1096A11 - R30_2B. AMOUNT/VARIABLE PAID
X5722	Q1353A10 - T2. AMOUNT OF INCOME
X6691	Q578 - G7_1. HOW MANY VEHICLES OWN(RAW)
X5604	Q1336A1 - R99_4. AMOUNT IN ACCOUNT
X7823	Q696A1 - H15. LOAN INSTITUTION ON CARD
X2305	Q582A2 - G10. WHAT MODEL YEAR
X2202	Q578 - G7_1. # VEHICLES OWN(FIN)
X4219	Q1095A11 - R30_2A. PERCENT PAID
X312	Q48A2 - A6. TYPE OF INSTITUTION
X5609	Q1344A1 - R99_6F. FREQ OF EXPECTED PMTS

X2220 Q610A1 - G22. LOAN INSTITUTION ON CARD
X3606 Q780A1B1 - N13. WHICH INSTITUTION
X5608 Q1342A1 - R99_6. AMT OF EXPECTED PMTS
X2725 Q728A1 - I14. LOAN INSTITUTION ON CARD
X5702 Q1353A1 - T2. AMOUNT OF INCOME
X7751 Q1339A1 - R99_5YS. EXPECT IN # YEARS
X5607 Q1340A1 - R99_5AG. EXPECT AT AGE
X7349 Q1341A1 - R99_5YR. EXPECT IN YEAR
X7126 Q75 - A5_10_4. MAKE ANY AUTO BILL PMTS?
X7128 Q487A2 - A5_10_5. MORTGAGE/RENT PAYMENTS
X6790 Q487A3 - A5_10_5. INSURANCE PAYMENTS?
X6854 Q487A4 - A5_10_5. AUTOMATIC TRANSFERS?
X6855 Q487A5 - A5_10_5. IRREG BILL PAYMENTS?
X6857 Q487A8 - A5_10_5. OTHER PAYMENTS?
X7127 Q487A1 - A5_10_5. UTILITY BILL PAYMENTS?
X6856 Q487A6 - A5_10_5.NON-MORT LOAN PAYMENTS?
X7129 Q487A7 - A5_10_5. OTHER PAYMENTS (#1)?
X5603 Q1334A1 - R99_3. INC FORMULA, ACCT, BOTH
X5601 Q1330 - R99. FUTURE PENSION BENEFITS?
X5606 Q1333A1 - R99_2. R OR S RECEIVE BENEFITS
X5724 Q1353A12 - T2. AMOUNT OF INCOME
X5725 Q1352A12 - T1V. COMMENT FOR OTHER TYPE
X6702 Q1331 - R99_1. NUMBER OF FUTURE BENEFITS
X5602 Q1331 - R99_1. NUM FUT BENEFITS(FIN)
X5723 Q1351A12 - T1. INCOME ANY OTHER SOURCE?
X328 Q48A6 - A6. TYPE OF INSTITUTION
X817 Q252A1 - D36.WHICH INSTITUTION
X316 Q48A3 - A6. TYPE OF INSTITUTION
X7360 Q1347 - R100. IRA/KEOGH OR PENSION PLAN?
X5729 Q1355 - T3. CORRECTED TOTAL INCOME
X324 Q48A5 - A6. TYPE OF INSTITUTION
X320 Q48A4 - A6. TYPE OF INSTITUTION

Variables with 25 or More New Missing Values (in ascending order)

X5320 Q1313A1 - R97_6.INCREASE W/COST OF LIVE?
X5608 Q1342A1 - R99_6. AMT OF EXPECTED PMTS
X5751 Q1377 - T7_4.TOTAL ADJUSTED GROSS INCOME
X4221 Q1098A11 - R30_2. FREQ OF EMPLOYER CONT
X3510 Q761A2 - N5. AMOUNT IN CHECKING ACCOUNT
X7667 Q1527 - Y31_2. FREQUENCY OF PAYMENTS
X6734 Q1225A1 - R46_16V. COMMENT FOR DEPENDS
X6733 Q1220A1 - R46_15V. COMMENT FOR DEPENDS
X4219 Q1095A11 - R30_2A. PERCENT PAID
X3506 Q761A1 - N5. AMOUNT IN CHECKING ACCOUNT
X6736 Q1267A1 - R47_15V. COMMENT FOR DEPENDS
X6739 Q1284A1 - R47_19V. COMMENT FOR DEPENDS

X6754	Q1269A1 - R47_16V. COMMENT FOR OTHER
X4220	Q1096A11 - R30_2B. AMOUNT/VARIABLE PAID
X316	Q48A3 - A6. TYPE OF INSTITUTION
X7666	Q1525 - Y31_2. AMT OF INSURANCE PMTS
X320	Q48A4 - A6. TYPE OF INSTITUTION
X6743	Q1220A2 - R46_15V. COMMENT FOR DEPENDS
X6744	Q1225A2 - R46_16V. COMMENT FOR DEPENDS
X6746	Q1267A2 - R47_15V. COMMENT FOR DEPENDS
X6749	Q1284A2 - R47_19V. COMMENT FOR DEPENDS
X6764	Q1269A2 - R47_16V. COMMENT FOR OTHER
X5729	Q1355 - T3. CORRECTED TOTAL INCOME
X6737	Q1274A1 - R47_17V. COMMENT FOR DEPENDS
X6738	Q1279A1 - R47_18V. COMMENT FOR DEPENDS
X324	Q48A5 - A6. TYPE OF INSTITUTION
X328	Q48A6 - A6. TYPE OF INSTITUTION
X6608	Q50A2B1 - A7. HOW DO BUSINESS W/ INSTIT
X6609	Q50A2B2 - A7. HOW DO BUSINESS W/ INSTIT
X6610	Q50A2B3 - A7. HOW DO BUSINESS W/ INSTIT
X6611	Q50A2B4 - A7. HOW DO BUSINESS W/ INSTIT
X6612	Q50A2B5 - A7. HOW DO BUSINESS W/ INSTIT
X6613	Q50A2B6 - A7. HOW DO BUSINESS W/ INSTIT
X6614	Q50A2B7 - A7. HOW DO BUSINESS W/ INSTIT
X6615	Q50A2B8 - A7. HOW DO BUSINESS W/ INSTIT
X314	Q53A2 - A8A. # OF MILES TO INSTITUTION
X6742	Q1180A2 - R45_13V. COMMENT FOR DEPENDS
X6762	Q1175A2 - R45_12V. COMMENT FOR DEPENDS
X318	Q53A3 - A8A. # OF MILES TO INSTITUTION
X6616	Q50A3B1 - A7. HOW DO BUSINESS W/ INSTIT
X6617	Q50A3B2 - A7. HOW DO BUSINESS W/ INSTIT
X6618	Q50A3B3 - A7. HOW DO BUSINESS W/ INSTIT
X6619	Q50A3B4 - A7. HOW DO BUSINESS W/ INSTIT
X6620	Q50A3B5 - A7. HOW DO BUSINESS W/ INSTIT
X6621	Q50A3B6 - A7. HOW DO BUSINESS W/ INSTIT
X6622	Q50A3B7 - A7. HOW DO BUSINESS W/ INSTIT
X6623	Q50A3B8 - A7. HOW DO BUSINESS W/ INSTIT
X6747	Q1274A2 - R47_17V. COMMENT FOR DEPENDS
X6748	Q1279A2 - R47_18V. COMMENT FOR DEPENDS
X6732	Q1180A1 - R45_13V. COMMENT FOR DEPENDS
X6752	Q1175A1 - R45_12V. COMMENT FOR DEPENDS
X6640	Q50A6B1 - A7. HOW DO BUSINESS W/ INSTIT
X6641	Q50A6B2 - A7. HOW DO BUSINESS W/ INSTIT
X6642	Q50A6B3 - A7. HOW DO BUSINESS W/ INSTIT
X6643	Q50A6B4 - A7. HOW DO BUSINESS W/ INSTIT
X6644	Q50A6B5 - A7. HOW DO BUSINESS W/ INSTIT
X6645	Q50A6B6 - A7. HOW DO BUSINESS W/ INSTIT
X6646	Q50A6B7 - A7. HOW DO BUSINESS W/ INSTIT
X6647	Q50A6B8 - A7. HOW DO BUSINESS W/ INSTIT

X330	Q53A6 - A8A. # OF MILES TO INSTITUTION
X326	Q53A5 - A8A. # OF MILES TO INSTITUTION
X6632	Q50A5B1 - A7. HOW DO BUSINESS W/ INSTIT
X6633	Q50A5B2 - A7. HOW DO BUSINESS W/ INSTIT
X6634	Q50A5B3 - A7. HOW DO BUSINESS W/ INSTIT
X6635	Q50A5B4 - A7. HOW DO BUSINESS W/ INSTIT
X6636	Q50A5B5 - A7. HOW DO BUSINESS W/ INSTIT
X6637	Q50A5B6 - A7. HOW DO BUSINESS W/ INSTIT
X6638	Q50A5B7 - A7. HOW DO BUSINESS W/ INSTIT
X6639	Q50A5B8 - A7. HOW DO BUSINESS W/ INSTIT
X6624	Q50A4B1 - A7. HOW DO BUSINESS W/ INSTIT
X6625	Q50A4B2 - A7. HOW DO BUSINESS W/ INSTIT
X6626	Q50A4B3 - A7. HOW DO BUSINESS W/ INSTIT
X6627	Q50A4B4 - A7. HOW DO BUSINESS W/ INSTIT
X6628	Q50A4B5 - A7. HOW DO BUSINESS W/ INSTIT
X6629	Q50A4B6 - A7. HOW DO BUSINESS W/ INSTIT
X6630	Q50A4B7 - A7. HOW DO BUSINESS W/ INSTIT
X6631	Q50A4B8 - A7. HOW DO BUSINESS W/ INSTIT
X322	Q53A4 - A8A. # OF MILES TO INSTITUTION

3. Definitions of Categories in Table 2

Household listing:

X13 X14 X18 X19 X100 X101 X102 X103 X104 X105 X106 X107 X108 X109 X110 X111 X112 X113 X114 X115 X116 X117 X118 X119 X120 X121 X122 X123 X124 X125 X126 X127 X128 X129 X130 X131 X132 X133 X134 X135 X136 X137 X202 X203 X204 X205 X206 X207 X208 X209 X210 X211 X212 X213 X214 X215 X216 X217 X218 X219 X220 X221 X222 X223 X224 X225 X7000 X7001 X7002 X7003 X7005 X7006 X7007 X7008 X7009 X7010 X7011 X7012 X7013 X7014 X7015 X7016 X7017 X7018 X8000 X8020 X8021 X8022 X8023 X8024 X8098

Institutions:

X305 X308 X312 X316 X320 X324 X328 X6600 X6601 X6602 X6603 X6604 X6605 X6606 X6607 X6608 X6609 X6610 X6611 X6612 X6613 X6614 X6615 X6616 X6617 X6618 X6619 X6620 X6621 X6622 X6623 X6624 X6625 X6626 X6627 X6628 X6629 X6630 X6631 X6632 X6633 X6634 X6635 X6636 X6637 X6638 X6639 X6640 X6641 X6642 X6643 X6644 X6645 X6646 X6647 X310 X314 X318 X322 X326 X330 X306 X7582 X7122 X7123 X7124 X6858 X6859 X7125 X7126 X7127 X7128 X6790 X6854 X6855 X6856 X7129 X6857 X7130

Credit cards:

X401 X402 X403 X404 X405 X406 X7131 X407 X408 X7585 X7584 X409 X7583 X410 X7973 X7974 X7975 X7976 X7977 X411 X419 X422 X425 X428 X412 X420 X423 X426 X429 X413 X421 X424 X427 X430 X414 X7132 X415 X416 X417 X418 X7500 X6648 X6649 X6720 X432 X7577 X7576 X7575 X301 X302 X7100 X7101 X7102 X7103 X7104 X7105 X7106 X7107 X7108 X7109 X7110 X6849 X7111 X7112 X7113 X7114 X7115 X7116 X7117 X7118 X7119 X7120 X7121

Housing:

X501 X502 X503 X504 X505 X506 X507 X508 X509 X510 X511 X513 X514 X515 X516 X517 X518 X519 X520 X521 X522 X523 X526 X601 X602 X603 X604 X605 X606 X607 X608 X609 X610 X611 X612 X613 X614 X615 X616 X617 X618 X619 X620 X621 X622 X623 X624 X625 X626 X627 X628 X629 X630 X631 X632 X633 X634 X635 X636 X701 X702 X703 X704 X705 X706 X707 X708 X709 X710 X711 X712 X713 X714 X715 X716 X717 X718 X719 X720 X721 X722 X6770 X6771 X7133 X7134 X7135 X7136 X7572 X7573 X7574

Mortgages and lines of credit:

X7137 X7141 X7142 X7143 X6723 X723 X724 X725 X726 X727 X801 X802 X803 X804 X805 X806 X807 X808 X809 X810 X811 X812 X813 X814 X815 X816 X817 X819 X820 X821 X822 X823 X824 X825 X826 X827 X828 X829 X830 X901 X902 X903 X904 X905 X906 X907 X908 X909 X911 X912 X913 X914 X915 X916 X917 X918 X920 X931 X1001 X1002 X1004 X1005 X1006 X1007 X1008 X1009 X1011 X1012 X1013 X1014 X1015 X1016 X1017 X1018 X1020 X1032 X1033 X1034 X1035 X1036 X1037 X1038 X1039 X1040 X1041 X1042 X1043 X1044 X1045 X1046 X1101 X1102 X1103 X1104 X1105 X1106 X1108 X1109 X1110 X1111 X1112 X1113 X1114 X1115 X1116 X1117 X1119 X1120 X1121 X1122 X1123 X1124 X1125 X1126 X1127 X1128 X1130 X1131 X1132 X1133 X1134 X1135 X1136 X1201 X1202 X1203 X1204 X1205 X1206 X1207 X1208 X1209 X1210 X1211 X1212 X1213 X1214 X1215 X1216 X1217 X1218 X1219 X1220 X1221 X1222 X1223 X1224 X1225 X6686 X7564 X7565 X7566 X7567 X7568 X7569 X7570 X7571 X8401

Investment real estate:

X6687 X6688 X1401 X1402 X1403 X1404 X1405 X1406 X1407 X1408 X1409 X1410 X1411 X1412 X1413 X1414 X1415 X1416 X1417 X1418 X1504 X1505 X1506 X1507 X1508 X1509 X1510 X1511 X1512 X1513 X1514 X1515 X1516 X1517 X1518 X1604 X1605 X1606 X1607 X1608 X1609 X1610 X1611 X1612 X1613 X1614 X1615 X1616 X1617 X1618 X1619 X1620 X1621 X1700 X1701 X1703 X1704 X1705 X1706 X1707 X1708 X1709 X1710 X1711 X1712 X1713 X1714 X1715 X1716 X1717 X1718 X1719 X1720 X1721 X1722 X1723 X1724 X1725 X1726 X1727 X1728 X1729 X1730 X1731 X1803 X1804 X1805 X1806 X1807 X1808 X1809 X1810 X1811 X1812 X1813 X1814 X1815 X1816 X1817 X1818 X1819 X1820 X1821 X1822 X1823 X1824 X1825 X1826 X1827 X1828 X1829 X1830 X1831 X1903 X1904 X1905 X1906 X1907 X1908 X1909 X1910 X1911 X1912 X1913 X1914 X1915 X1916 X1917 X1918 X1919 X1920 X1921 X1922 X1923 X1924 X1925 X1926 X1927 X1928 X1929 X1930 X1931 X2001 X2002 X2003 X2004 X2005 X2006 X2007 X2008 X2009 X2010 X2011 X2012 X2013 X2014 X2015 X2016 X2017 X2018 X2019 X2020 X7552 X7553 X7554 X7555 X8402 X8403 X8404 X8405 X8406 X8407 X8408 X8409 X8410 X8411 X8412 X8413 X8414 X8415 X8416 X8417 X8418 X8419 X8420 X8421 X8422 X8423 X8424

Businesses:

X8425 X8426 X8427 X3101 X3102 X3103 X3104 X3105 X3107 X3108 X3110 X3111 X3112 X3113 X3114 X3115 X3116 X3117 X3118 X3119 X3120 X3121 X3122 X3123 X3124 X3125 X3126 X3127 X3128 X3129 X3130 X3131 X3132 X3134 X3207 X3208 X3210 X3211 X3212 X3213 X3214 X3215 X3216 X3217 X3218 X3219 X3220 X3221 X3222 X3223 X3224 X3225 X3226 X3227 X3228 X3229 X3230 X3231 X3232 X3234 X3307 X3308 X3310 X3311 X3312 X3313 X3314 X3315 X3316 X3317 X3318 X3319 X3320 X3321 X3322 X3323 X3324 X3325 X3326 X3327 X3328 X3329 X3330 X3331 X3332 X3334 X3335 X3336 X3337 X3401 X3402 X3403 X3404 X3405 X3406 X3407 X3408 X3409 X3410 X3411 X3412 X3413 X3414 X3415 X3416 X3417 X3418 X3419 X3420 X3421 X3422 X3423 X3424 X3425 X3426 X3427 X3428 X3429 X3430 X6689 X6719 X7144 X7145 X7146 X7545 X7546 X7547 X7548 X7549 X7550 X7551 X8452 X8453 X8454

Vehicles:

X8428 X8429 X8430 X8431 X8432 X8433 X8434 X8435 X8436 X8437 X8438 X8439 X7149 X7150 X7152
X7153 X7154 X7155 X7156 X7157 X7158 X7159 X7160 X7161 X7162 X7163 X7164 X7165 X7166 X7167
X7168 X7169 X7170 X7171 X7172 X6690 X6691 X6692 X2101 X2102 X2104 X2105 X2106 X2107 X2108
X2109 X2111 X2112 X2113 X2114 X2115 X2116 X2117 X2118 X2201 X2202 X2203 X2205 X2206 X2207
X2208 X2209 X2210 X2211 X2212 X2213 X2214 X2215 X2216 X2217 X2218 X2219 X2220 X2221 X2303
X2305 X2306 X2307 X2308 X2309 X2310 X2311 X2312 X2313 X2314 X2315 X2316 X2317 X2318 X2319
X2320 X2321 X2403 X2405 X2406 X2407 X2408 X2409 X2410 X2411 X2412 X2413 X2414 X2415 X2416
X2417 X2418 X2419 X2420 X2421 X2422 X2423 X2424 X2425 X2426 X2501 X2502 X2503 X2504 X2505
X2506 X2507 X2508 X2509 X2510 X2511 X2512 X2513 X2514 X2515 X2516 X2517 X2518 X2519 X2520
X2521 X2522 X2605 X2606 X2607 X2608 X2609 X2610 X2611 X2612 X2613 X2614 X2615 X2616 X2617
X2618 X2619 X2620 X2621 X2622 X2623 X2624 X2625 X2626 X2627 X7528 X7529 X7530 X7531 X7532
X7533 X7534 X7535 X7536 X7537 X7538 X7539 X7540 X7541 X7542 X7543

Consumer loans:

X8440 X8441 X8442 X8443 X8444 X8445 X7173 X7174 X7175 X7176 X7177 X7178 X7179 X7180 X7181
X7182 X7183 X7184 X7185 X6693 X6694 X7801 X7802 X7803 X7804 X7805 X7806 X7807 X7808 X7809
X7810 X7811 X7812 X7813 X7814 X7815 X7816 X7817 X7818 X7819 X7820 X7821 X7822 X7823 X7824
X7825 X7826 X7827 X7828 X7829 X7830 X7831 X7832 X7833 X7834 X7835 X7836 X7837 X7838 X7839
X7840 X7841 X7842 X7843 X7844 X7845 X7846 X7847 X7848 X7849 X7850 X7851 X7852 X7853 X7854
X7855 X7856 X7857 X7858 X7859 X7860 X7861 X7862 X7863 X7864 X7865 X7866 X7867 X7868 X7869
X7870 X7871 X7903 X7904 X7905 X7906 X7907 X7908 X7909 X7910 X7911 X7912 X7913 X7914 X7915
X7916 X7917 X7918 X7919 X7920 X7921 X7922 X7923 X7924 X7925 X7926 X7927 X7928 X7929 X7930
X7931 X7932 X7933 X7934 X7935 X7936 X7937 X7938 X7939 X7940 X7941 X7942 X7943 X7944 X7945
X7946 X7947 X7948 X7949 X7950 X7951 X7952 X7953 X7954 X7955 X7956 X7957 X7958 X7959 X7960
X7961 X7962 X7963 X7964 X7965 X7966 X7967 X7968 X7969 X7970 X7971 X2709 X2710 X2712 X2713
X2714 X2715 X2716 X2717 X2718 X2719 X2720 X2721 X2722 X2723 X2724 X2725 X2726 X2727 X2729
X2730 X2731 X2732 X2733 X2734 X2735 X2736 X2737 X2738 X2739 X2740 X2741 X2742 X2743 X2810
X2812 X2813 X2814 X2815 X2816 X2817 X2818 X2819 X2820 X2821 X2822 X2823 X2824 X2825 X2826
X2827 X2829 X2830 X2831 X2832 X2833 X2834 X2835 X2836 X2837 X2838 X2839 X2840 X2841 X2842
X2843 X2910 X2912 X2913 X2914 X2915 X2916 X2917 X2918 X2919 X2920 X2921 X2922 X2923 X2924
X2925 X2926 X2927 X2929 X2930 X2931 X2932 X2933 X2934 X2935 X2936 X2937 X2938 X2939 X2940
X2941 X2942 X2943 X3004 X3005 X6772 X6773 X6774 X6842 X6843 X6844 X6845 X6846 X6847 X7516
X7517 X7518 X7519 X7520 X7521 X7522 X7523 X7524 X7525 X7526 X7527

Financial assets:

X7407 X7186 X7187 X3006 X3007 X3008 X3010 X3011 X3012 X3013 X3014 X3015 X3016 X3017 X3018
X3019 X3020 X3023 X6848 X6788 X6789 X7506 X7507 X7508 X7509 X7510 X7511 X7512 X7513 X7514
X8446 X7515 X7601 X7603 X7605 X7607 X7609 X7611 X7613 X7615 X7617 X7618 X7620 X7622 X7624
X7626 X7628 X7630 X7631 X7632 X7633 X7634 X7635 X7636 X7637 X7638 X7639 X7640 X7641 X7642
X7644 X7645 X7647 X8447 X8448 X6654 X6655 X6656 X6667 X6668 X6669 X6799 X6800 X6801 X6802
X8174 X6803 X6815 X6816 X6817 X6818 X6819 X6820 X6821 X6822 X6823 X6824 X6825 X6826 X6827
X6828 X6829 X6830 X6831 X6832 X6833 X6834 X6835 X6836 X6837 X6838 X6839 X6840 X6841 X6850
X6851 X6852 X6853 X7191 X7192 X7193 X7501 X7502 X7503 X6695 X6696 X6697 X6704 X6705 X6706
X6721 X6722 X3501 X3502 X3503 X3504 X3505 X3506 X3507 X3508 X3509 X3510 X3511 X3512 X3513

X3514 X3515 X3516 X3517 X3518 X3519 X3520 X3521 X3522 X3523 X3524 X3525 X3526 X3527 X3528
X3529 X3530 X3531 X3601 X3602 X3603 X3604 X3605 X3606 X3607 X3608 X3609 X3610 X3612 X3613
X3614 X3615 X3616 X3617 X3618 X3619 X3620 X3622 X3623 X3624 X3625 X3626 X3627 X3628 X3629
X3630 X3631 X3701 X3702 X3703 X3704 X3705 X3706 X3707 X3708 X3709 X3710 X3711 X3712 X3713
X3714 X3715 X3716 X3717 X3718 X3719 X3720 X3721 X3722 X3723 X3724 X3725 X3801 X3802 X3803
X3804 X3805 X3806 X3807 X3808 X3809 X3810 X3811 X3812 X3813 X3814 X3815 X3816 X3817 X3818
X3819 X3820 X3821 X3822 X3823 X3824 X3825 X3826 X3827 X3828 X3829 X3830 X3831 X3832 X3833
X3834 X3835 X3901 X3902 X3903 X3904 X3905 X3906 X3907 X3908 X3909 X3910 X3913 X3914 X3915
X3916 X3917 X3918 X3919 X3920 X3921 X3922 X3923 X3924 X3925 X3926 X3927 X3928 X3929 X3930
X3931 X3932 X4001 X4002 X4003 X4004 X4005 X4006 X4007 X4008 X4009 X4010 X4011 X4012 X4013
X4014 X4015 X4016 X4017 X4018 X4019 X4020 X4022 X4023 X4024 X4026 X4027 X4028 X4030 X4031
X4032

Employment

X6670 X6671 X6672 X6673 X6674 X6675 X6676 X6677 X6678 X6679 X6680 X6681 X6682 X6683 X6684
X6685 X4100 X4101 X4102 X4103 X4104 X4105 X4106 X4110 X4111 X4112 X4113 X4114 X4115 X4116
X4117 X4121 X4122 X4123 X4124 X4125 X4127 X4129 X4130 X4131 X4132 X4133 X4501 X4502 X4503
X4504 X4505 X4507 X4508 X4509 X4510 X4511 X4512 X4513 X4514 X4515 X4518 X4519 X4520 X4521
X4522 X4523 X4524 X4525 X4526 X4527 X4528 X4529 X4530 X4531 X4532 X4533 X4534 X4535 X4538
X4539 X4540 X4541 X4542 X4543 X4544 X4545 X4546 X4601 X4602 X4603 X4604 X4605 X4606 X4607
X4608 X4611 X4612 X4613 X4614 X4615 X4616 X4617 X4618 X4619 X4620 X4621 X4622 X4700 X4701
X4702 X4703 X4704 X4705 X4706 X4710 X4711 X4712 X4713 X4714 X4715 X4716 X4717 X4721 X4722
X4723 X4724 X4725 X4727 X4729 X4730 X4731 X4732 X4733 X5101 X5102 X5103 X5104 X5105 X5107
X5108 X5109 X5110 X5111 X5112 X5113 X5114 X5115 X5118 X5119 X5120 X5121 X5122 X5123 X5124
X5125 X5126 X5127 X5128 X5129 X5130 X5131 X5132 X5133 X5134 X5135 X5138 X5139 X5140 X5141
X5142 X5143 X5144 X5145 X5146 X5201 X5202 X5203 X5204 X5205 X5206 X5207 X5208 X5211 X5212
X5213 X5214 X5215 X5216 X5217 X5218 X5219 X5220 X5221 X5222 X6731 X6732 X6733 X6734 X6735
X6736 X6737 X6738 X6739 X6741 X6742 X6743 X6744 X6745 X6746 X6747 X6748 X6749 X6751 X6752
X6753 X6754 X6761 X6762 X6763 X6764 X6780 X6781 X6782 X6783 X6784 X6785 X6786 X6787 X6791
X6797 X6798 X7196 X7197 X7198 X7199 X7200 X7201 X7202 X7203 X7233 X7234 X7235 X7236 X7237
X7238 X7239 X7240 X7241 X7242 X7243 X7244 X7245 X7246 X7247 X7248 X7249 X7250 X7251 X7252
X7253 X7254 X7255 X7256 X7257 X7258 X7259 X7260 X7261 X7262 X7263 X7264 X7265 X7266 X7267
X7268 X7269 X7270 X7300 X7301 X7302 X7303 X7304 X7305 X7306 X7307 X7308 X7309 X7310 X7311
X7312 X7313 X7314 X7315 X7316 X7317 X7318 X7319 X7320 X7321 X7322 X7323 X7324 X7325 X7326
X7327 X7328 X7329 X7401 X7402 X7403 X7404 X7405 X7406 X7408 X7409 X7410 X7411 X7412 X7413
X7414 X7415 X7416 X7417 X7418 X7419 X7420 X7587 X7588 X7679 X7680 X7681 X7682 X7683 X7684
X7700 X7701 X7702 X7703 X7704 X7706 X7707 X7708 X7709 X7710 X7711 X7727 X7728 X7729 X7730
X7731 X7732 X7733

Pensions:

X8455 X8456 X8457 X8458 X8459 X7734 X7735 X7736 X7737 X7738 X7739 X7740 X7741 X7742 X7743
X7744 X7745 X7746 X7747 X7748 X7749 X7750 X7751 X7752 X7753 X7754 X7755 X7756 X8449 X8450
X6708 X6709 X6710 X6711 X6712 X6713 X6714 X6715 X6716 X6717 X7712 X7713 X7714 X7715 X7716
X7717 X7718 X7719 X7720 X7721 X7722 X7723 X7724 X7725 X7726 X7685 X7686 X7687 X7688 X7689
X7690 X7691 X7692 X7693 X7694 X7695 X7696 X7697 X7698 X7699 X7330 X7331 X7332 X7333 X7334

X7335 X7336 X7337 X7338 X7339 X7340 X7341 X7342 X7343 X7344 X7345 X7346 X7347 X7348 X7349
X7350 X7351 X7352 X7353 X7354 X7355 X7356 X7357 X7358 X7359 X7360 X7272 X7273 X7274 X7275
X7276 X7277 X7278 X7279 X7280 X7281 X7282 X7283 X7284 X7285 X7286 X7287 X7288 X7289 X7290
X7291 X7292 X7293 X7294 X7295 X7296 X7297 X7298 X7299 X7205 X7206 X7207 X7208 X7209 X7210
X7211 X7212 X7213 X7214 X7215 X7216 X7217 X7218 X7219 X7220 X7221 X7222 X7223 X7224 X7225
X7226 X7227 X7228 X7229 X7230 X7231 X7232 X6804 X6805 X6806 X6807 X6808 X6792 X6793 X6794
X6795 X6796 X6698 X6699 X6700 X6701 X6702 X6718 X4134 X4135 X4136 X4137 X4138 X4139 X4140
X4141 X4201 X4202 X4203 X4204 X4205 X4206 X4207 X4208 X4209 X4210 X4211 X4212 X4213 X4214
X4215 X4216 X4217 X4218 X4219 X4220 X4221 X4222 X4223 X4224 X4225 X4226 X4227 X4228 X4229
X4230 X4231 X4232 X4233 X4234 X4235 X4302 X4303 X4304 X4305 X4306 X4307 X4308 X4309 X4310
X4311 X4312 X4313 X4314 X4315 X4316 X4317 X4318 X4319 X4320 X4321 X4322 X4323 X4324 X4325
X4326 X4327 X4328 X4329 X4330 X4331 X4332 X4333 X4334 X4335 X4402 X4403 X4404 X4405 X4406
X4407 X4408 X4409 X4410 X4411 X4412 X4413 X4414 X4415 X4416 X4417 X4418 X4419 X4420 X4421
X4422 X4423 X4424 X4425 X4426 X4427 X4428 X4429 X4430 X4431 X4432 X4433 X4434 X4435 X4436
X4437 X4734 X4735 X4736 X4737 X4738 X4739 X4740 X4741 X4801 X4802 X4803 X4804 X4805 X4806
X4807 X4808 X4809 X4810 X4811 X4812 X4813 X4814 X4815 X4816 X4817 X4818 X4819 X4820 X4821
X4822 X4823 X4824 X4825 X4826 X4827 X4828 X4829 X4830 X4831 X4832 X4833 X4834 X4835 X4902
X4903 X4904 X4905 X4906 X4907 X4908 X4909 X4910 X4911 X4912 X4913 X4914 X4915 X4916 X4917
X4918 X4919 X4920 X4921 X4922 X4923 X4924 X4925 X4926 X4927 X4928 X4929 X4930 X4931 X4932
X4933 X4934 X4935 X5002 X5003 X5004 X5005 X5006 X5007 X5008 X5009 X5010 X5011 X5012 X5013
X5014 X5015 X5016 X5017 X5018 X5019 X5020 X5021 X5022 X5023 X5024 X5025 X5026 X5027 X5028
X5029 X5030 X5031 X5032 X5033 X5034 X5035 X5036 X5037 X5301 X5302 X5303 X5304 X5305 X5306
X5307 X5308 X5309 X5310 X5311 X5312 X5313 X5314 X5315 X5316 X5317 X5318 X5319 X5320 X5321
X5322 X5323 X5324 X5325 X5326 X5327 X5328 X5329 X5330 X5331 X5332 X5333 X5334 X5335 X5336
X5337 X5338 X5415 X5416 X5417 X5418 X5419 X5420 X5421 X5422 X5423 X5424 X5425 X5426 X5427
X5428 X5429 X5430 X5431 X5432 X5433 X5434 X5435 X5436 X5437 X5438 X5501 X5502 X5503 X5504
X5505 X5506 X5507 X5508 X5509 X5510 X5511 X5512 X5513 X5514 X5515 X5516 X5517 X5518 X5519
X5520 X5601 X5602 X5603 X5604 X5606 X5607 X5608 X5609 X5610 X5611 X5612 X5614 X5615 X5616
X5617 X5618 X5619 X5620 X5622 X5623 X5624 X5625 X5626 X5627 X5628 X5630 X5631 X5632 X5633
X5634 X5635 X5636 X5638 X5639 X5640 X5641 X5642 X5643 X5644 X5646 X5647 X5648 X5649 X6775
X6776 X6777 X6778 X6779

Income:

X6765 X6766 X5701 X5702 X5703 X5704 X5705 X5706 X5707 X5708 X5709 X5710 X5711 X5712 X5713
X5714 X5715 X5716 X5717 X5718 X5719 X5720 X5721 X5722 X5723 X5724 X5725 X5729 X5731 X5732
X5733 X5734 X5735 X5736 X5737 X5738 X5739 X5740 X5741 X5742 X5743 X5744 X5746 X5747 X5748
X5749 X5750 X5751 X7361 X7758 X7759 X7760 X7761 X7762 X7763 X7764 X7765 X7362 X7364 X7366
X7367 X7368 X7369 X7586 X7650 X7651 X7652

Inheritances:

X7662 X5801 X5802 X5803 X5804 X5805 X5806 X5807 X5808 X5809 X5810 X5811 X5812 X5813 X5814
X5815 X5816 X5817 X5818 X6703 X5819 X5821 X5822 X5823 X5824 X5825 X8451

Demographics

X7370 X7371 X7372 X7373 X7374 X7375 X7376 X7377 X7378 X7379 X7380 X7381 X7382 X7383 X7384 X7385 X7386 X7387 X7392 X7393 X7394 X7395 X7396 X6809 X6810 X6811 X6812 X6813 X6814 X5901 X5902 X5903 X5904 X5905 X5906 X5907 X5908 X5910 X5911 X5912 X5925 X5926 X5927 X5928 X5929 X5930 X6026 X6027 X6028 X6029 X6030 X6031 X6101 X6102 X6103 X6104 X6105 X6106 X6107 X6108 X6120 X6121 X6122 X6123 X6124 X6201 X6650 X6651 X6652 X6653 X8005 X8007 X8008 X8011 X8016 X8017 X8018

Health insurance:

X7397 X6226 X6227 X6228 X6229 X6230 X6231 X6232 X6233 X6234 X6235 X6236 X6237 X6238 X6239 X7399 X6240 X6241 X6242 X6301 X6302 X6303 X6304 X7766 X7767 X6305 X6306 X6307 X6308 X6309 X6310 X6311 X6312 X6313 X6314 X6315 X6316 X6317 X6318 X6319 X6320 X6321 X6322 X6323 X6324 X6325 X6326 X6327 X6328 X6329 X6330 X6331 X6332 X6333 X6334 X6335 X6336 X6337 X7664 X7665 X7666 X7667

Secondary families:

X6402 X6403 X6404 X6405 X6406 X6407 X6408 X6409 X6410 X6411 X6412 X6413 X6414 X6415 X6416 X6417 X6418 X6419 X6420 X6421 X6422 X6423 X6424 X6425 X6426 X6427 X6428 X6429 X6430 X6431 X6432 X6433 X6434 X6435 X6436 X6437 X6438 X6439 X6440

4. Variable Definitions for Two-Stage Model

CODERR: Number of times in a given case that the information coded by an interviewer as a verbatim response to a partially open-ended question could have been field-coded.

NOCODE: Number of times in a given case that the information provided by an interviewer as a verbatim response to a question was insufficient to determine a code within the code frame.

EDOLL: Number of times dollar variables in a given case were altered in any way during editing.

NMDOLL: Number of times dollar variables in a given case were set to a missing value as a result of editing.

CONST: Constant in the models.

RFEE: The amount of any fee paid to the respondent to participate in the interview.

RAGE: Age of the respondent.

NWHISP: Dummy variable=1 if the respondent was nonwhite or Hispanic.

RHEALTH: Scale variable for respondent's self-reported health: 1=excellent,...,4=poor.

MARRIED: Dummy variable=1 if the respondent is married or living with a partner.

HHSIZE: Number of people living in the household.

REDN: Number of years of education for the respondent.

INTEREST: Interviewer's assessment of the respondent's interest in the interview: 1=very high,...,5=very low.

EXPRESS: Interviewer's assessment of the respondent's ability to express himself: 1=excellent,...,4=poor.

UNDERSTD: Interviewer's assessment of respondent's understanding of the survey questions: 1=excellent,...,4=poor.

SUSPA: Dummy variable=1 if interviewer perceived the respondent to be suspicious of the interview at the end.

RWORK: Dummy variable=1 if the respondent was working or temporarily laid off or on sick leave at the time of the interview.

DHOWNER: Dummy variable=1 if the respondent's family living there owned the house.

TIMEAREA: Natural logarithm of the number of years the respondent the longest resident of the household has lived in the area.

NORMY: Natural logarithm of the "normal" income for the family.

HIINC: Dummy variable=1 if the family's income in 1997 was unusually high.

ASSETS: Natural logarithm of the total amount of the family's assets.

DEBT: Natural logarithm of the total amount of the family's debts.

MHORIZ: Financial planning horizon: 1=next few months,..., 5=longer than 10 years.

COMMTIME: Natural logarithm of the average commuting time in minutes for people living in the Census tract.

TIMEIW: Natural logarithm of the length of the interview in seconds.

DSTR1: Dummy variable=1 if the observation was from stratum 1 of the list sample.

DSTR2: Dummy variable=1 if the observation was from stratum 2 of the list sample.

DSTR3: Dummy variable=1 if the observation was from stratum 3 of the list sample.

DSTR4: Dummy variable=1 if the observation was from stratum 4 of the list sample.

DSTR5: Dummy variable=1 if the observation was from stratum 5 of the list sample.

DSTR6: Dummy variable=1 if the observation was from stratum 6 of the list sample.

DSTR7: Dummy variable=1 if the observation was from stratum 7 of the list sample.

REG1: Dummy variable=1 if the observation was in the northeastern part of the country.

REG2: Dummy variable=1 if the observation was in the northcentral/midwest region of the country.

REG3: Dummy variable=1 if the observation was in the western region of the country.

SRPSU: Dummy variable=1 if the observation was in a self-representing PSU.

MSA: Dummy variable=1 if the observation was in any type of MSA.

LIWEREXP: Natural logarithm of the number of years the interviewer has worked as an interviewer.

DISCF: Dummy variable=1 if the interviewer had worked on the SCF before 1998.

LIAGE: Natural logarithm of the age of the interviewer.

ICOLLEGE: Dummy variable=1 if the interviewer had at least some years of college education.

ITYPEF: Dummy variable=1 if the interviewer was a fast typist.

ITYPES: Dummy variable=1 if the interviewer was a slow touch-typist.

IRESEAR: Interviewer's reaction to statement "I like being a part of a research project.": 1=strongly agree,...,5=strongly disagree.

INEIGHB: Interviewer's reaction to statement "I enjoy the challenge of visiting unfamiliar neighborhoods.": 1=strongly agree,...,5=strongly disagree.

DFIGURE: Interviewer's reaction to statement "Most of the time I can figure out what a respondent's real objections are.": 1=strongly agree,...,5=strongly disagree.

DIGET: Interviewer's reaction to statement "It's better to persuade a reluctant presondent to participate than to accept a refusal, even when you feel they won't give very accurate answers.": 1=strongly agree,...,5=strongly disagree.

DIRRESP: Interviewer's reaction to statement "We should respect respondents' rights to refuse by not pushing when they say 'no'.": 1=strongly agree,...,5=strongly disagree.

IOUTGO: Interviewer's reaction to statement "I am generally very outgoing.": 1=strongly agree,...,5=strongly disagree.

ICONOUT: Interviewer confidence that respondents' identifying information is never given to anyone outside the project group: 1=strongly disagree, ..., 5=strongly agree

LCOUNT: Natural logarithm of the number of cases completed by the interviewer.

Dummy variables were defined for each of the interviewers in the sample used to estimate the model (167 interviewers) except one arbitrarily chosen interviewer who serves as the omitted group.